File Term File Version Update: (Dated: 13-July-2011)

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----:Table of Content:----

Table of Content

FILE TERM FILE ..... **VERSION UPDATE: (DATED: 10-JULY-2011)**
1

TABLE OF CONTENT **2**

SHORT QUESTIONS PAPER **18**

SET-01 18
Question: ..... ***Error! Bookmark not defined.***
SET-02 20
Question: ..... ***Error! Bookmark not defined.***
SET-03 23
Question: ..... ***Error! Bookmark not defined.***
SET-04 27
Question: ..... ***Error! Bookmark not defined.***
SET-05 28
Question: ..... ***Error! Bookmark not defined.***
SET-06 29
Question: ..... ***Error! Bookmark not defined.***
SET-07 34
Question: ..... ***Error! Bookmark not defined.***
SET-08 37
Question: ..... ***Error! Bookmark not defined.***
SET-09 40
Question: ..... ***Error! Bookmark not defined.***
SET-10 41
Question: ..... ***Error! Bookmark not defined.***
SET-11 41
Question: ..... ***Error! Bookmark not defined.***
SET-12 43
Question: *43*
SET-13 43
Question: *43*
SET-14 ..... **ERROR! BOOKMARK NOT DEFINED.**
Question: ..... ***Error! Bookmark not defined.***
SET-15 ..... **ERROR! BOOKMARK NOT DEFINED.**
Question: ..... ***Error! Bookmark not defined.***
SET-16 ..... **ERROR! BOOKMARK NOT DEFINED.**
Question: ..... ***Error! Bookmark not defined.***
SET-17 ..... **ERROR! BOOKMARK NOT DEFINED.**
Question: ..... ***Error! Bookmark not defined.***
SET-18 ..... **ERROR! BOOKMARK NOT DEFINED.**
Question: ..... ***Error! Bookmark not defined.***
SET-19 ..... **ERROR! BOOKMARK NOT DEFINED.**
Question: ..... ***Error! Bookmark not defined.***
SET-20 ..... **ERROR! BOOKMARK NOT DEFINED.**
Question: ..... ***Error! Bookmark not defined.***

MULTIPLE CHOICE QUESTION **43**

SET-01 43
SET-02 47

SET-03 52
SET-04 53
SET-05 60
SET-06 61
SET-07 65
SET-08 68
SET-09 71
SET-10 77
SET-11 82
SET-12 84
SET-13 87
SET-14 107
SET-15 111
SET-16 113
SET-17 115
SET-18 117
SET-19 122
SET-20 125

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CS401 Short Notes

Op-Code:

An op-code (operation code) is the portion of a machine language instruction that specifies the operation to be performed. For every specific operation like add subtract or multiplication there is an op-code which processor understands. Like “add” we have 152 and subtract “153”.

Program Counter/ Instruction Pointer:

A Program is an ordered set of instructions. Instruction executes one after the other. Program Counter / Instruction Pointer ensure that instructions are working in order also Program counter/Instruction Pointer holds the address of the next instruction to be executed.

Control Bus:

It’s the part of computer Bus. CPU communicates with other devices within the computer through control bus. Through control bus CPU assign different jobs to other parts (registers, memory, input output) to perform some functionality on data. For Example Read data from memory Write data on memory Move data in register.
Control Lines: As CPU have to perform more than one control operations so control bus consist of more than one lines called control lines. The number and type of lines in a control bus varies but there are basic lines common to all microprocessors, Read Write
Offset A distance from a given paragraph boundary in memory. The offset usually is given as a number of bytes.

Segment Registers:

In certain processors memory is segmented (or divided).Its actually not physically segmented rather logically to store code, data, stack etc in different portions of memory. So there should be some way to specify the starting address of each such segment. That’s way registers are used called segment registers. 1
There are four types of these registers CS: Code Segment DS: Data Segment SS: Stack Segment ES: Extra Segment
CS contains the segment of the current instruction (IP is the offset).
DS is the segment used by default for most data operations or most memory references come from data segment.
SS contains the stack segment (SP is the offset). ES as name shows extra segment register. String instructions(movs,stos) also use this register.

Logical Address and Physical Address:

The segment, offset pair is called a logical address, while the 20bit address is a physical address which is the real thing. Logical addressing is a mechanism to access the physical memory.

Offset:

A distance from a given paragraph boundary in memory. The offset usually is given as a number of bytes
Word is unit of data, like (bit -1 , nibble -4 , byte-8, word-16, Dword-32, Qword-64) A word is of 2 bytes = 16bits Dword = 4 bytes Qword= 8 bytes
Registers are like **Scratch Pad Ram**.
What are the meaning of scratch pad ram.
Scratchpad means a high-speed internal memory used for temporary storage of preliminary information.

An 8-bit register, like AH, AL, BH, BL, can only store one data element at a time. And a 16-bit register can store multiple data element e.g. one in AH and other in AL. 2

Segment memory model or segment register is all about how processor sees the different portion of the memory. Our Program is consisting of two parts, the code and the data, and actually there is a third part called the program stack as well, but higher level languages make this invisible to us. These three logical parts of a program should appear as three distinct units in memory, but making this division is not possible in the linear memory model. The segmented memory model does allow this distinction. We divide the memory into the functional parts or windows, one is for code and other is for data. Processor sees code form the code window and data from the data window. Now if process sees the code section it cant see the data section through the same window and vice versa. At a time four window exist one is CS(Code window) hold the base point of the code 2nd is DS(Data window) hold the base point of the data 3rd is SS(Stack segment) holds the base point of the stack segment and last one is ES(Extra segment) its use only for data movement. Size of each window is 64K but it can move in any region in 1MB size.

Segment memory model is all about how processor sees the different portion of the memory. I hope you can now understand the segmented memory model.

This problem is discussed in P.14 of the handouts. Just read the handout with full concentration. Here the Segment and Offset address are given which are necessary to make physical address. Both offset and segment address are 16 bit to make 20 bit we use mechanism mention below.

Now as Figure Show

Segment register = 1DDD it is16 bit to make 20 bit we add 0 with the end of the segment register now it become = 1DDD0

And offset 0100 which is also 16 bit now we add 0 before the offset address to make 20 bit. Offset = 0100 after append 0 before it become 00100

Now add both

1DDD0

00100 +

_____

1DED0 that is 20 bit physical address.

I hope now you understand how to calculate physical address.

Op-code

The op-code or operation code is the binary pattern that represents an instruction.

Segmentation: 3

The segmented memory model allows multiple functional windows into the main memory, a code window, a data window etc. The processor sees code from the code window and data from the data window. The size of one window is restricted to 64K. However the maximum memory iAPX88 can access is 1MB which can be accessed with 20 bits.

Mnemonic

A word, abbreviation, or acronym that replaces something too complex to remember or type easily. For example, ADC is the mnemonic for the 8086's add-with-carry instruction. The assembler converts it into machine (binary) code, so it is not necessary to remember or calculate the binary form.

Big-endian and little-endian are terms that describe the order in which a sequence of bytes are stored in computer memory. Big-endian is an order in which the "big end" (most significant value in the sequence) is stored first (at the lowest storage address). Little-endian is an order in which the "little end" (least significant value in the sequence) is stored first. For example, in a big-endian computer, the two bytes required for the hexadecimal number 4F52 would be stored as 4F52 in storage (if 4F is stored at

storage address 1000, for example, 52 will be at address 1001). In a little-endian system, it would be stored as 524F (52 at address 1000, 4F at 1001).
IBM's 370 computers, most RISC-based computers, and Motorola microprocessors use the big-endian approach.On the other hand, Intel processors (CPUs) and DEC Alphas and at least some programs that run on them are little-endian.

Shift Operation:

In this operation, the digits are moved, or shifted, to the left or right. Registers in a computer processor have a fixed number of available bits for storing data, so during shift some bits will be "shifted out" of the register at one end, while the same number of bits are "shifted in" from the other end.shifted out bits are either discarded or preserved in Flags.

Rotation:

Rotate instructions are similar to shift instructions, except that rotate instructions are circular, with the bits shifted out at one end returning(re-entring) on the other end. Rotates can be to the left or right.

What is CALL and RET function ?

In every processor, instructions are available to divert temporarily and to divert permanently. The instructions for permanent diversion in 8088 are the jump instructions, while the instruction for temporary diversion is the CALL instruction. The word call must be familiar to the readers from subroutine call in higher level languages. The CALL instruction allows temporary diversion and therefore reusability of code.
For example in the bubble sort code one place and reuse it again and again. This was not possible with permanent diversion. Actually the 8088 permanent diversion mechanism can be tricked to achieve temporary diversion. CALL takes a label as argument and execution starts from the label, until the RET instruction is encountered and it takes execution back to the instruction following the CALL. Both the instructions are mostly used as a pair. But they are independent CALL can be use independent of the RET and RET can also be use independent of the CALL. RET give control back to the next instruction after the CALL.
Here in this subject we have studied different "Intel processor architectures". From these one of earlier architecture is Intel 8080 and other is Intel 8085.These architectures use memory modeling scheme called linear memory model or flat memory model. So A flat memory model uses a linear (or sequential) addressing scheme, allowing direct addressing of all available memory locations.
Now when a processor or DMA-enabled device needs to read or write to a memory location, it specifies that memory location on the address bus (the value to be read or written is sent on the data bus). The width of the address bus determines the amount of memory a system can address. As in Intel 8080 and 8086 processor internal registers are of 16 bits that's why the maximum **linear** address space was limited to 64 KB.
When designing iAPX88 the Intel designers wanted to remain compatible with 8080 and 8085 however 64K was too small to continue with, for their new processor. To get the best of both worlds they introduced the segmented memory model in 8088. There is also a logical argument in favor of a segmented memory model in addition to the issue of compatibility discussed above. We have two logical parts of our program, the code and the data and actually there is a third part called the program stack as well, but higher level languages make this invisible to us. These three logical parts of a program should appear as three distinct units in memory, but making this division is not possible in the linear memory model. The segmented memory model does allow this distinction.
Intel AiAPX88 is also architecture of 16 bits processor but in order to access segmented memory it will generate the address of 20 bits as follows
Address = 16*segment + offset

And 20-bit external address bus gave an 1 MB (segmented) physical address space (2^{20} = 1,048,576).
The **SCAS** stand for Scan String. Basically it's a block processing instruction in Intel 8088. SCAS compares a source byte or word in register AL or AX with the destination string element addressed by ES:DI and updates the flags. DI is updated to point to the next location. SCAS is often used to locate equality or in-equality in a string through the use of an appropriate prefix. SCAS is a bit different from the other instructions. This is more like the CMP instruction in that it does subtraction of its operands. The prefixes REPE (repeat while equal) and REPNE (repeat while not equal) are used with this instruction. The instruction is used to locate a byte in AL in the block of memory. When the first equality or inequality is encountered; both have uses. For example this instruction can be used to search for a 0 in a null terminated string to calculate the length of the string. In this form REPNE will be used to repeat while the null is not there.

LES and LDS Instructions

As Mention in the lecture that the string instructions need their source and destination in the form of a segment offset pair, there are two special instructions that load a segment register and a general purpose register from two consecutive memory locations. LES loads ES while LDS loads DS. These instructions have two parameters, one is the general purpose register to be loaded and the other is the memory location from which to load these registers. According to Intel rules of significance the word at higher address is loaded in the segment register while the word at lower address is loaded in the offset register. As parameters segment should be pushed first so that it ends up at a higher address and the offset should be pushed afterwards. When loading the lower address will be given.
far jump is one that uses the full segment base: offset value as an absolute address. In far jump in addition to the simple jump operations, there are the call (call a subroutine) and ret (return from subroutine) instructions. Before transferring control to the subroutine, call pushes the segment offset address of the instruction following the call onto the stack; ret pops this value off the stack, and jumps to it, effectively returning the flow of control to that part of the program. In the case of a far call, the segment base is pushed following the offset; far ret pops the offset and then the segment base to return from that subroutine.
So from above explanation you can understand that the example of far jump is calling a subroutine and then retuning from that.
There are three types of unconditional jumps
Short jumps
Near jumps
Far jumps
Their range calculation is as follows
The **short jump** is 2-byte instructions allow jumps or branches to memory locations with in +127 and -128 bytes from the address following the jump. This is the limitation of a byte in singed representation.
Near jump is a 3-byte instructions allow a branch or jump within ±32K bytes (or anywhere in the current segment) from the instructions in the current code segment.
Finally the 5-byte **far jump** allows a jump to any memory location within the real memory system
The short and near jumps are often called intra segment jumps and far jumps are often called inter segment jumps 6
Signed numbers are represented in form of 2's compliment in memory and registers and these are calculated as follows fisrt take 1's compliment of a number then add "1" in that complimented number and the result will show the number in 2's compliment or signed number.

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Notes From Interrupts:

Interrupts are asynchronous and unpredictable. Asynchronous means that the interrupts occur, independent of the working of the processor. Unpredictable means the time at which an interrupt will come cannot be predicted,

The 8088 processor divides interrupts into two classes.
Software interrupts generated by the external world.
Hardware interrupts. are not generated from outside the processor.

Just like the far call loads new values in CS and IP, the interrupt call loads new values in **CS, IP, and FLAGS.**
To generate an interrupt the **INT instruction** is used. The routine that executes in response to an INT instruction is called the **interrupt service routine (ISR)** or the interrupt handler.
Introducing a new entry in this mapping table is called **hooking an interrupt.**
INT takes a single byte argument varying from 0-255. This is the interrupt number informing the processor, which interrupt is currently of interest.
The correlation process from the interrupt number to the interrupt handler uses a table called **interrupt vector table**.
Each entry of the table is **four bytes long containing the segment and offset** of the interrupt routine for the corresponding interrupt number.
The **first two bytes** in the entry contain the **offset** and the **next two bytes** contain the **segment**.
Mathematically offset of the interrupt n will be at nx4 while the segment will be at nx4+2. One entry in this table is called a vector.
When the handler finishes its work it uses the IRET instruction to return to the caller.
IRET pops IP, then CS, and then FLAGS.
1. The INT and IRET instruction format and syntax
2. The formation of IVT (interrupt vector table)
3. Operation of the processor when an interrupt in generated

IRQ Numbering:

The eight input signals to the PIC are called Interrupt Requests (IRQ). The eight lines are called IRQ 0 to IRQ 7. These are the input lines of the 8451.
IRQ 0 is derived by a timer device.
The timer device keeps generating interrupts with a specified frequency.
IRQ 1 is derived by the keyboard when generates an interrupts
when a key is pressed or released.
IRQ 2 is the cascading interrupt connected
to the output of the second 8451 in the machine.
IRQ 3 is connected to serial port COM 2
IRQ 4 is connected to serial port COM 1.
IRQ 5 is used by the sound card or the network card or the modem.
An IRQ conflict means that two devices in the
system want to use the same IRQ line.
IRQ 6 is used by the floppy disk drive
IRQ 7 is used by the parallel port.
0-Timer device , 1-keyboard, 2-cascading interrupt , 3-serial port COM2. ,
4-Serial port COM1 , 5-SoundCard or LAN card , 6-Floppy disk drive

7-Parallel port.

Errata for Assembly Language Programming Lecture Notes

Page 12

In Topic 1.8.Segmented Memory Model, under heading Rationale, in second paragraph, second line
Change "additional to" to "addition to"

Page 13

In Topic 1.8.Segmented Memory Model, under heading Mechanism, in fifth paragraph, second last line,
Change "anywhere is the whole megabyte" to "anywhere in the whole megabyte"

Page 24

In Example 2.7, in the description of code line 010, in ninth line,
Change "If the CX register becomes zero as a result of this subtraction the zero flag will be set and the jump will be taken" to " As long as the CX register is non zero after this subtraction the zero flag will not be set and the jump will be taken"

Page 26

In Topic 2.6.Segment Association, third paragraph, fourth line,
Change "register used in BP" to “register used is BP”

Page 32

In Topic 3.1.Comparison and Conditions, in the second last line above the table,
Change "numbers than occur after a comparison" to "numbers that occur after a comparison"

Page 33

In Topic 3.2.Conditional Jumps,
In the last column of the whole table swap destination and source (as shown in the table given below). All comparisons reveal the relation of the destination to the source and not the other way round.

JC JB JNAE	Jump if carry Jump if below Jump if not above or equal	CF = 1	The jump is taken if the last arithmetic operation generated a carry or required a borrow. After a CMP it is taken if the unsigned destination is smaller than the unsigned source.
JNC JNB JAE	Jump if not carry Jump if not below Jump if above or equal	CF = 0	This jump is taken if the last arithmetic operation did not generated a carry or required a

			borrow. After a CMP it is taken if the unsigned destination is larger or equal to the unsigned source.
JA JNBE	Jump if above Jump if not below or equal	ZF =0 AND CF = 0	This jump is taken after a CMP if the unsigned destination is larger than the unsigned source.
JNA JBE	Jump if not above Jump if below or equal	ZF = 1 OR CF = 1	This jump is taken after a CMP if the unsigned destination is smaller than or equal to the unsigned source.
JL JNGE	Jump if less Jump if not greater or equal	SF ≠ OF	This jump is taken after a CMP if the signed destination is smaller than the signed source.
JNL JGE	Jump if not less Jump if greater or equal	SF = OF	This jump is taken after a CMP if the signed destination is larger than or equal to the signed source.
JG JNLE	Jump if greater Jump if not less or equal	ZF = 0 AND SF =OF	This jump is taken after a CMP if the signed destination is larger than the signed source.
JNG JLE	Jump if not greater Jump if less or equal	ZF = 1 OR SF ≠ OF	This jump is taken after a CMP if the signed destination is smaller than or equal to the

			signed source.

Page 34

In the above table, also change the entry in second column corresponding to JBE from "Jump if not Below or Equal" to "Jump if Below or Equal"

Page 35

In Topic 3.2.Conditional Jumps, after the table, third paragraph, first line,
Change “It is JCXZ, jump if the CS register is zero" to “It is JCXZ, jump if the CX register is zero"

Page 37

Types of Jump

Change the Figure with this one

Page 38

In Topic 3.5.Types of Jump, under heading Far Jump, sixth line,
Change "wit the segment part“ to "with the segment part"

Page 39

In Example 3.3, code line 025,
Change “je bsort” to “je start”

Page 46

In Topic 4.3.Multiplication in Assembly Language, third paragraph, second last point,
Change "shift the multiplicand to the right" to "shift the multiplicand to the left.”

Page 50

In Example 4.2, in the description of code line 05-07,
Change "the multiplicand and the multiplier are stored in 32bit space” to “the multiplicand and the result are stored in 32bit space.”

Page 51

In Topic 4.5.Bitwise Logical Operations, under heading NOT operation, last line,
Change "not byte [mem], 5" to "not byte [mem]”
In Topic 4.6.Masking Operations, under heading Selective Bit Setting,
Change "The operation can be used as a masking operation" to "The OR operation can be used as a masking operation”

Page 52

In Example 4.3, in code line 12,
Change comments "move right most bit in carry" to "test right most bit”

Page 71

In Topic.6.1.ASCII Codes, in third paragraph, first line,
Change "Standard ASCII has 128 characters with assigned numbers" to "Standard ASCII has 128 characters with numbers assigned”

Page 73

In Topic 6.2.Display Memory Formation, under heading Display Examples, fourth paragraph, last line,
Change "green color on black background" to "green color on blue background”

Page 74

In Topic 6.3.Hello Word in Assembly Language, in first paragraph, after the last line,
Change "db 0x61, 0x61, 0x63" to "db 0x61, 0x62, 0x63"

Page 83

In Topic 7.1.String Processing, in first paragraph, last line,
Change "whole block to 0741" to "whole block to 0720"

Page 84

In Topic 7.1.String Processing, under heading STOS, second paragraph,
Change "If DF is clear, SI will be incremented" to "If DF is clear, DI will be incremented"
Change "If DF is set SI will be decremented" to "If DF is set, DI will be decremented"

Page 95

In Topic 8.1.Interrupts, second paragraph, fifth line,
Change "Far all allows us to" to "Far call allows us to"

Page 96

In Topic 8.1.Interrupts, last paragraph
The operation of INT can be written as:

- sp ← sp-2
- [sp] ← flag
- sp ← sp-2
- if ← 0
- tf ← 0
- [sp] ← cs
- sp ← sp-2
- [sp] ← ip
- ip ← [0:N*4]
- cs ← [0:N*4+2]

The operation of IRET can be written as:

- ip ← [sp]
- sp ← sp+2
- cs ← [sp]
- sp ← sp+2
- flag ← [sp]
- sp ← sp+2

Page 113

In Topic 9.3.Terminate and Stay Resident, fourth paragraph,
Change "Above it are the BIOS data area" to "Then are the BIOS data area"

Page 126

In Example 10.1,
Code line 051,
Change "mov cx, 0" to "mov cx, 4"
Code line 090,
Change "mov ax, [bp+8]" to "mov ax, [bp+10]"
Code line 093,
Change "add di, [bp+6]" to "add di, [bp+8]"

Hexadecimal Numbers

Representing even small number such as 6918 requires a long binary string (1101100000110) of 0s and 1s. Larger decimal numbers would require lengthier binary strings.
Writing such long string is tedious and prone to errors.
The Hexadecimal number system is a base 16 number system and therefore has 16 digits and is used primarily to represent binary strings in a compact manner.

Hexadecimal number system is not used by a Digital System. The Hexadecimal numbersystem is for our convenience to long binary strings in a short and concise form. EachHexadecimal Number digit can represent a 4-bit Binary Number. The Binary Numbersand the Hexadecimal equivalents are listed in the following Table

Decimal Binary Hexadecimal Decimal Binary Hexadecimal

0 0000 0 8 1000 8
1 0001 1 9 1001 9
2 0010 2 10 1010 A
3 0011 3 11 1011 B
4 0100 4 12 1100 C
5 0101 5 13 1101 D
6 0110 6 14 1110 E
7 0111 7 15 1111 F

Counting in Hexadecimal

Counting in Hexadecimal is similar to the other number systems.
The maximum value represented by a single Hexadecimal digit is F which is equivalentto decimal 15. The next higher value decimal 16 is represented by a combination of twoHexadecimal digits 1016 or 10 H. The subscript 16 indicates that the number isHexadecimal 10 and not decimal 10. Hexadecimal Numbers are also identified byappending the character H after the number. The Hexadecimal Numbers for Decimalnumbers 16 to 39 are listed in the following Table.

Decimal Hexadecimal Decimal Hexadecimal Decimal Hexadecimal

16 10 24 18 32 20
17 11 25 19 33 21
18 12 26 1A 34 22
19 13 27 1B 35 23
20 14 28 1C 36 24
21 15 29 1D 37 25
22 16 30 1E 38 26
23 17 31 1F 39 27

Binary to Hexadecimal Conversion

Converting Binary to Hexadecimal is a very simple operation. The Binary string isdivided into small groups of 4-bits starting from the least significant bit. Each 4-bit binarygroup is replaced by its Hexadecimal equivalent.
11010110101110010110 Binary Number
1101 0110 1011 1001 0110 Dividing into groups of 4-bits
D 6 B 9 6 Replacing each group by its Hexadecimal equivalent
Thus 11010110101110010110 is represented in Hexadecimal by D6B96Binary strings which can not be exactly divided into a whole number of 4-bit groups areassumed to have 0's appended in the most significant bits to complete a group.1101100000110 Binary Number
1 1011 0000 0110 Dividing into groups of 4-bits
0001 1011 0000 0110 Appending three 0s to complete the group
1 B 0 6 Replacing each group by its Hexadecimal equivalent

Hexadecimal to Binary Conversion

Converting from Hexadecimal back to binary is also very simple. Each digit of theHexadecimal number is replaced by an equivalent binary string of 4-bits.
FD13 Hexadecimal Number
1111 1101 0001 0011 Replacing each Hexadecimal digit by its 4-bit binary equivalent

Decimal to Hexadecimal Conversion

There are two methods to convert from Decimal to Hexadecimal. The first method is theIndirect Method and the second method is the Repeated Division Method.

1. Indirect Method

A decimal number can be converted into its Hexadecimal equivalent indirectly by firstconverting the decimal number into its binary equivalent and then converting the binaryto Hexadecimal.

2. Repeated Division-by-16 Method

The Repeated Division Method has been discussed earlier and used to convert DecimalNumbers to Binary by repeatedly dividing the Decimal Number by 2. A decimal numbercan be directly converted into Hexadecimal by using repeated division. The decimalnumber is continuously divided by 16 (base value of the Hexadecimal number system).The conversion of Decimal 2096 to Hexadecimal using the Repeated Division-by-16Method is illustrated in the following Table. The hexadecimal equivalent of 209610 is83016.

Number Quotient after division Remainder after division

2096 131 0
131 8 3
8 0 8

Hexadecimal to Decimal Conversion

Converting Hexadecimal Numbers to Decimal is done using two Methods. The firstMethod is the Indirect Method and the second method is the Sum-of-Weights method.

1. Indirect Method

The indirect method of converting Hexadecimal number to decimal number is to firstconvert Hexadecimal number to Binary and then Binary to Decimal.

2. Sum-of-Weights Method

A Hexadecimal number can be directly converted into Decimal by using the sum of weights method. The conversion steps using the Sum-of-Weights method are shown.

CA02 Hexadecimal number
C x 163 + A x 162 + 0 x 161 + 2 x 160 Writing the number in an expression
(C x 4096) + (A x 256) + (0 x 16) + (2 x 1)
(12 x 4096) + (10 x 256) + (0 x 16) + (2 x 1) Replacing Hexadecimal values with Decimal equivalents
49152 + 2560 + 0 + 2 Summing the Weights
51714 Decimal equivalent

Hexadecimal Addition and Subtraction

Numbers represented in Hexadecimal can be added and subtracted directly withouthaving to convert them into decimal or binary equivalents. The rules of Addition andSubtraction that are used to add and subtract numbers in Decimal or Binary numbersystems apply to Hexadecimal Addition and Subtraction. Hexadecimal Addition andSubtractions allows large Binary numbers to be quickly added and subtracted.

1. Hexadecimal Addition

Carry 1
Number1 2 A C 6
Number 2 9 2 B 5
Sum B D 7 B

2. Hexadecimal Subtraction

Borrow 1 1 1
Number 1 9 2 B 5
Number 2 2 A C 6
Difference 6 7 E F

NUMBER SYSTEMS

Binary to Decimal conversion

Most real world quantities are represented in Decimal Number System. Digital Systems on the other hand are based on the Binary Number System. Therefore, when converting fromthe Digital Domain to the real-world, Binary numbers have to be represented in

terms of their Decimal equivalents. The method used to convert from Binary to Decimal is the Sum-of-Weights method. The Sum-of-Weights method has been used to represent the Caveman numbers □□, □□□□ and the Binary numbers 10011 and 1011.101 in the first lecture.

1. Sum-of-Weights Method

Sum-of-weights as the name indicates sums the weights of the Binary Digits (bits) of a Binary Number which is to be represented in Decimal. The Sum-of-Weights method can be used to convert a Binary number of any magnitude to its equivalent Decimal representation.

In the Sum-of-Weights method an extended expression is written in terms of the Binary Base Number 2 and the weights of the Binary number to be converted. The weights correspond to each of the binary bits which are multiplied by the corresponding binary value.

Binary bits having the value 0 do not contribute any value towards the final sum expression.

The Binary number 101102 is therefore written in the form of an expression having weights 20, 21, 22, 23 and 24 corresponding to the bits 0, 1, 1, 0 and 1 respectively. Weights 20 and 23 do not contribute in the final sum as the binary bits corresponding to these weights have the value 0.

101102 = 1 x 24 + 0 x 23 + 1 x 22 + 1 x 21 + 0 x 20
= 16 + 0 + 4 + 2 + 0
= 22

2. Sum-of-non-zero terms

In the Sum-of-Weights method, the Binary bits 0 do not contribute towards the final sum representing the decimal equivalent. Secondly, the weight of each binary bit increases by a factor of 2 starting with a weight of 1 for the least significant bit. For example, the Binary number 101102 has weights 20=1, 21=2, 22=4, 23=8 and 24=16 corresponding to the bits 0, 1, 1, 0 and 1 respectively.

The Sum-of-non-zero terms method is a quicker method to determine decimal equivalents of binary numbers without resorting to writing an expression. In the Sum-of-nonzero terms method the weights of non-zero binary bits are summed, as the weights of zero binary bits do not contribute towards the final sum representing the decimal equivalent.

The weights of binary bits starting from the right most least significant bit is 1, The next significant bit on the left has the weight 2, followed by 4, 8, 16, 32 etc. corresponding to higher significant bits. In binary number system the weights of successive bits increase by an order of 2 towards the left side and decrease by an order of 2 towards the right side. Thus a binary number can be quickly converted into its decimal equivalent by adding weights of non-zero terms which increase by a factor of 2. Binary numbers having an integer and a fraction part can similarly be converted into their decimal equivalents by applying the same method.

A quicker method is to add the weights of non-zero terms. Thus for the numbers

- 100112 = 16 + 2 + 1 = 19
- 1011.1012 = 8 + 2 + 1 + ½ + 1/8 = 11 + 5/8 = 11.625

Decimal to Binary conversion

Conversion from Decimal to Binary number system is also essential to represent real-world quantities in terms of Binary values. The Sum-of-weights and repeated division by 2 methods are used to convert a Decimal number to equivalent Binary.

1. Sum-of-Weights

The Sum-of-weights method used to convert Binary numbers into their Decimal equivalent is based on adding binary weights of the binary number bits. Converting back from the decimal number to the original Binary number requires finding the highest weight included in the sum representing the decimal equivalent. A Binary 1 is marked to represent the bit which contributed its weight in the Sum representing the

decimal equivalent. The weight is subtracted from the sum decimal equivalent. The next highest weight included in the sum term is found. A binary 1 is marked to represent the bit which contributed its weight in the sum term and the weight is subtracted from the sum term. This process is repeated until the sum term becomes equal to zero. The binary 1s and 0s represent the binary bits that contributed their weight and bits that did not contribute any weight respectively.
The process of determining Binary equivalent of a Decimal number 392 and 411 is illustrated in a tabular form. Table 2.1.
Sum Term Highest
Weight
Binary
Number
Sum Term
= Sum Term – Highest Weight
411 256 100000000 155
155 128 110000000 27
27 16 110010000 11
11 8 110011000 3
3 2 110011010 1
1 1 110011011 0
Table 2.1a Converting Decimal to Binary using Sum-of-Weights Method Sum Term
Highest Weight Binary Number Sum Term
= Sum Term – Highest Weight
392 256 100000000 136
136 128 110000000 8
8 8 110001000 0
Table 2.1b Converting Decimal to Binary using Sum-of-Weights Method The Sum of weights method requires mental arithmetic and is a quick way of converting small decimal numbers into binary. With practice large Decimal numbers can be converted into Binary equivalents.
2. Repeated Division-by-2
Repeated Division-by-2 method allows decimal numbers of any magnitude to be converted into binary. In this method the Decimal number to be converted into its Binary
CS302 - Digital Logic & Design
equivalent is repeatedly divided by 2. The divisor is selected as 2 because the decimal number is being converted into Binary a Base-2 Number system. Repeated division method can be used to convert decimal number into any Number system by repeated division by the Base- Number. For example, the decimal number can be converted into the Caveman Number system by repeatedly dividing by 5, the Base number of the Caveman Number System. The Repeated Division method will be used in latter lectures to convert decimal into Hexadecimal and Octal Number Systems. In the Repeated-Division method the Decimal number to be converted is divided by the Base Number, in this particular case 2. A quotient value and a remainder value is generated, both values are noted done. The remainder value in all subsequent divisions would be either a 0 or a 1. The quotient value obtained as a result of division by 2 is divided again by 2. The new quotient and remainder values are again noted down. In each step of the repeated division method the remainder values are noted down and the quotient values are repeatedly divided by the base number. The process of repeated division stops when the quotient value becomes zero. The remainders that have been noted in consecutive steps are written out to indicate the
Binary equivalent of the Original Decimal Number.
Number Quotient after division Remainder after division
392 196 0

196 98 0
98 49 0
49 24 1
24 12 0
12 6 0
6 3 0
3 1 1
1 0 1

Table 2.2 Converting Decimal to Binary using Repeated Division by 2 Method

The process of determining the Binary equivalent of a Decimal number 392 is illustrated in a tabular form. Table 2.2. Reading the numbers in the Remainder column from
bottom to top 110001000 gives the binary equivalent of the decimal number 392

1's & 2's complement

Informing the digital system how to treat a binary number is not very efficient. A better way is to represent negative signed numbers in their 2's complement form. Using 2's Complement form to represent signed numbers, allows direct manipulation of positive as well as negative numbers without having to worry about setting the most significant sign bit to indicate positive and negative numbers.

A 2's complement of a number is obtained by first taking the 1's complement of a number and then adding a 1 to change the 1's complement to 2's complement. 1's complement of a number is obtained by simply inverting all its bits. Obtaining the 2's complement of 13 is described in the example below.

01101 The number 13
10010 1's complement of 13 is obtained by inverting all the five bits.
+ 1
10011 2's complement of 13 is obtained by adding a 1 to its 1's complement.

In a 2's complement number system all negative numbers are represented in their 2's complement form and all positive numbers are represented in their actual form. Negative numbers can be readily identified by their MSBs which are set to 1. Thus in a 2's complement representation +13 is represented as 01101 and -13 is represented as 10011. By having numbers represented in their 2's complement form addition and subtraction operations can easily be performed without having to worry about the sign bits. Thus +13 added to -13 should result in a zero value. This can be verified by directly adding the +13 and - 13 in their 2's complement forms.

01101
10011
100000

The most significant carry bit is discarded; retaining only the first 5 bits proves that adding +13 and -13 results in a zero value. Similarly it can be shown that adding the numbers
+7 and -13 results in -6.

10011 (-13)
00111 (+7)
11010 (-6)

The binary 2's complement number 11010 has its most significant bit set to 1 indicating that the number is negative. The actual magnitude of the negative number is determined by taking the 2's complement of 11010.

11010 Original number
00101 1's complement of Original number
+ 1

00110 2's complement of Original number is equal to 6.

==========>

Short Questions Paper

Set-01

Short Questions

1. How many bytes floppy root directory entry has? (2)

Answer:

64

2. How many calling conversion also tell the names? (2)

Answer:

There are two calling conversion.

3. Which register is used as thread local variable? (2)

Answer: sp register is used as thread local variable . see page 144

4. Write down the operations of CMP instruction? (2)

Answer:The CMP instruction sets the flags reflecting the relation of the destination to the source. This is important as when we say jump if above, then what is above what. The destination is above the source or the source is above the destination.

Answer: Here in this subject we have studied different "Intel processor architectures". From these one of earlier architecture is Intel 8080 and other is Intel 8085.These architectures use memory modeling scheme called linear memory model or flat memory model. So A flat memory model uses a linear (or sequential) addressing scheme, allowing direct addressing of all available memory locations Intel AiAPX88 is also architecture of 16 bits processor but in order to access segmented memory it will generate the address of 20 bits as follows

Address = 16*segment + offset

And 20-bit external address bus gave an 1 MB (segmented) physical address space (2^{20} = 1,048,576).

5. It is the part of Multitasking TSR caller, what will do these instructions comment against them (3)

```
Mov al, [chars+bx]      ; read the next shape
Mov [es:40],al          ; write at top left of screen
Inc bx                  ; increment to next shape
```

6. Differentiate synchronous transmission and asynchronous transmission? (3)

Answer:

Asynchronous means that the interrupts occur, independent of the working of the processor, i.e. independent of the instruction currently executing. Synchronous events are those that occur side by side with another activity. Interrupts must be asynchronous as they are generated by the external world which is unaware of the happenings inside the processor. True interrupts that occur in real time are asynchronous with the execution

7. List some architecture? (3)

Answer:IBM PC based on Intel architecture will be used as an example.

Basic Computer Architecture (Intel IAPX88) , intel 8080 , 8088

popular due to its simplistic design and versatile architecture. Based on the

experience gained from 8080, an advanced version was released as 8085. The processor became widely popular in the engineering community again due to its simple and logical nature.
Intel introduced the first 16bit processor named 8088 at a time when the concept of personal computer was evolving. With a maximum memory of 64K on the 8085, the 8088 allowed a whole mega byte. IBM embedded this processor in their personal computer. The first machines ran at 4.43 MHz; a blazing speed at that time. This was the right thing at the right moment. No one expected this to become the biggest success of computing history. IBM PC XT became so popular and successful due to its open architecture and easily available information.

Subjective (every question has 5 marks)

1. What information is required to be provided for the service "INT14-SERIAL WRITE CHARACTER TO PORT" in the following registers?

AH=_____
AL=_____
DX=_____

Answer:

The BIOS INT 14 provides serial port services. We will use a mix of BIOS services and direct port access for our example. A major limitation in using BIOS is that it does not allows interrupt driven data transfer, i.e. we are interrupted whenever a byte is ready to be read or a byte can be transferred since the previous transmission has completed. To achieve this we have to resort to direct port access. Important BIOS services regarding the serial port are discussed below.

INT 14 - SERIAL - INITIALIZE PORT

AH = 00h
AL = port parameters
DX = port number (00h-03h)
Return:
AH = line status
AL = modem status

INT 14 - SERIAL - WRITE CHARACTER TO PORT

AH = 01h
AL = character to write
DX = port number (00h-03h)
Return:
AH bit 7 = error flag
AH bits 6-0 = port status

INT 14 - SERIAL - GET PORT STATUS

AH = 03h
DX = port number (00h-03h)
Return:
AH = line status
AL = modem status

2. Write into C language

```
[section.txt]
Global swap
swap:     mov ecx,[esp+4]    copy parameters p1 to ecx
          mov edx[esp+8]     copy parameters p2 to edx
          mov eax,[ecx]            copy *p1 to eax
          xchg eax,[edx]           exchange eax to *p2
```

```
        mov [ecx],eax           copy eax to *p1
        ret                     return
```

Answer:
The above code will assemble in c through this command. Other aurwise error will occur.
Nasm-f win32 swap .asm

This command will generate swap.obj file.
The code for given program will be as follow.

```
#include <stdio.h>
Void swap(int* pl, int* p2);
Int main()
{
    Int a=10,
    Int b= 20;
Print f ("a=%d b=%d\n" , a ,b);

Swap (&a ,&b);

Print f ("a=%d b=%d\n" , a ,b);

System ( "pause");


Return 0;
}
```

3. Which instruction makes trap flag zero? If there is not any then how we make it zero?
Answer:
The trap flag has a special role in debugging . There is no instruction to set or clear the trap flag like there are instructions for the interrupt and direction flags. We use two special instructions PUSHF and POPF to push and pop the flag from the stack. We use PUSHF to place flags on the stack, change TF in this image on the stack and then reload into the flags register with POPF. The single step interrupt will come after the first instruction after POPF. The interrupt mechanism automatically clears IF and TF otherwise there would an infinite recursion of the single step interrupt. The TF is set in the flags on the stack so another interrupt will comes after one more instruction is executed after the return of the interrupt.

==========

Set-02

Question No: 42 (Marks: 2) -
INT 14 - SERIAL - READ CHARACTER 8 bit register return result in?
Answered Above:
INT 14 - SERIAL - READ CHARACTER FROM PORT
AH = 02h
DX = port number (00h-03h)
Return:
AH = line status

AL = received character if AH bit 7 clear

Question No: 43 (Marks: 2) -
What is the process control block answer in single line
Answer:
The space where all registers of a task are stored is called the process control block or PCB. Actual PCB contains a few more things that are not relevant to us now. INT 08 that is saving and restoring the registers is called the scheduler and the whole event is called a context switch.

Question No: 44 (Marks: 2) -
Explain Divide overflow
Answer:
If a large number is divided by a very small number it is possible that the quotient is larger than the space provided for it in the implied destination. In this case an interrupt is automatically generated and the program is usually terminated as a result. This is called a divide overflow error; just like the calculator shows an –E– when the result cannot be displayed.

Question No: 45 (Marks: 2)
What is the system descriptor?
Answer:
The P and DPL have the same meaning as in data and code descriptors.
The S bit tells that this is a system descriptor while the 1110 following it tells that it is a 386 interrupt gate.

Question No: 46 (Marks:3)
It is the part of Multitasking TSR caller, what will do these instructions comment against them

```
Mov al, [chars+bx]  ;read the next shape
Mov [es:40],al      ;write at the top left of screen
Inc bx              ;increament to the next shape
```

Answered Above:

Question No: 47 (Marks:3)
INT10 VESA use which register to return result?
Answer:
AL, AH , ES:DI

As an example of accessing a really large area of memory for which protected mode is a necessity, we will be accessing the video memory in high resolution and high color graphics mode where the necessary video memory is alone above a megabyte. We will be using the VESA VBE 2.0 for a standard for these high resolution modes.
VESA is the Video Electronics Standards Association and VBE is the set of Video BIOS Extensions proposed by them. The VESA VBE 2.0 standard includes a linear frame buffer mode that we will be using. This mode allows direct access to the whole video memory. Some important VESA services are listed below.
INT 10 – VESA – Get SuperVGA Infromation
AX = 4F00h
ES:DI -> buffer for SuperVGA information
Return:
AL = 4Fh if function supported

AH = status

INT 10 – VESA – Get SuperVGA Mode Information

AX = 4F01h
CX = SuperVGA video mode
ES:DI -> 256-byte buffer for mode information
Return:
AL = 4Fh if function supported
AH = status
ES:DI filled if no error

INT 10 – VESA – Set VESA Video Mode

AX = 4F02h
BX = new video mode
Return:
AL = 4Fh if function supported
AH = status

One of the VESA defined modes is 8117 which is a 1024x768 mode with 16bit color and a linear frame buffer. The 16 color bits for every pixel are organized in 5:6:5 format with 5 bits for red, 6 for green, and 5 for blue. This makes 32 shades of red and blue and 64 shades of green and 64K total possible colors. The 32bit linear frame buffer base address is available at offset 28 in the mode information buffer. Our example will produces shades of green on the screen and clear them and again print them in an infinite loop with delays in between.

Question No: 48 (Marks:3)
Three basic steps B/w memory and processor to communicate .
Answer:

Question No: 49 (Marks:3)
What is baud rate , tell the parity bit function.
Answer:
The data starts with a 1 bit called the start bit, then five to eight data bits, an optional parity bit, and one to two 0 bits called stop bits. The number of data bits, parity bits, and the number of stop bits have to be configured at both ends. Also the duration of a bit must be precisely known at both ends called the baud rate of the communication.

Question No: 50 (Marks:5)
Write the instruction of following
Copy BL into CL
Copy DX into AX
Store 0x12 into AL
Store 0x1234 into AX
Store 0xFFFF into AX

Question No: 51 (Marks:5)
9 pin DB9 connector , write function of any five
Answer:

Question No: 52 (Marks:5)
Fill in the blanks with proper words
AH = -09h --
AL = -- attribute --
BH = - page number ---
BL = - character to display ---
CX =--- number of times to write character –
Answer:
(09h, page number, number of times to write character, attribute ,character to display,)

Question No: 52 (Marks:5)
Fill in the blanks with proper words
The GDT itself is an array of descriptors where each descriptor is an 8byte entry. The base and limit of GDT is stored in a 48bit register called the GDTR. This register is loaded with a special instruction LGDT and is given a memory address from where the 48bits are fetched.
Answer:

==========

Set-03

Question No: 27 (Marks: 2)
How can we improve the speed of multitasking?
Ans:
We can improve the speed of multitasking by changing the frequency of timer interrupt.

Question No: 28 (Marks: 2)
Write instructions to do the following. Copy contents of memory location with offset 0025 in the current data segment into AX.

Ans:
```
Mov ax , [0025]
mov[0fff], ax
mov  ax , [0010]
mov [002f] , ax
```

Question No: 29 (Marks: 2)
Write types of Devices?
Ans:
There are two types devices used in pc.
1. Input devices(keyboard, mouse,)
2. Output devices.(monitor, printer)

Question No: 30 (Marks: 2)
What does descriptor 1st 16 bit tell?
Ans:
Each segment is describe by the descriptor like
1. base,
2. limit,
3. and attributes,

it basically define the actual base address.

Question No: 31 (Marks: 3)
List down any three common video services for INT 10 used in text mode.
Ans:
INT 10 - VIDEO - SET TEXT-MODE CURSOR SHAPE
INT 10 - VIDEO - SET CURSOR POSITION
INT 10 - VIDEO - SCROLL UP WINDOW
INT 10 - VIDEO - SCROLL DOWN WINDOW
INT 10 - VIDEO - WRITE STRING

Question No: 32 (Marks: 3)
How to create or Truncate File using INT 21 Service?
Ans:
INT 21 - TRUNCATE FILE
AH = 3Ch
CX = file attributes
DS:DX -> cs401 filename
Return:
CF = error flag
AX = file handle or error code

Question No: 33 (Marks: 3)
How many Types of granularity also name them?
Ans:
There are three types of granuality :
1. Data Granularity
2. Business Value Granularity
3. Functionality Granularity

Question No: 34 (Marks: 5)
How to read disk sector into memory using INT 13 service?
Ans:
INT 13 - DISK - READ SECTOR(S) INTO MEMORY :
AH = 02h
AL = number of sectors to read (must be nonzero)
CH = low eight bits of cylinder number
CL = sector number 1-63 (bits 0-5)
high two bits of cylinder (bits 6-7, hard disk only)
DH = head number
DL = drive number (bit 7 set for hard disk)
ES:BX -> data buffer

Return:
CF = error flag
AH = error code
AL = number of sectors transferred

Question No: 35 (Marks: 5)
The program given below is written in assembly language. Write a program in C to call this assembly routine.

```
[section .text]
global      swap
swap:       mov  ecx,[esp+4]      ; copy parameter p1 to ecx
            mov  edx,[esp+8]      ; copy parameter p2 to edx
```

```
mov  eax,[ecx]        ; copy *p1 into eax
xchg eax,[edx]        ; exchange eax with *p2
mov  [ecx],eax        ; copy eax into *p1
ret                     ; return from this function
```

Ans:
The above code will assemble in c through this command. Other aurwise error will occur.
Nasm-f win32 swap .asm

This command will generate swap.obj file.
The code for given program will be as follow.

```
#include <stdio.h>
Void swap(int* pl, int* p2);
Int main()
{
    Int a=10,
    Int b= 20;
Print f ("a=%d b=%d\n" , a ,b);

Swap (&a ,&b);

Print f ("a=%d b=%d\n" , a ,b);

System ( "pause");

Return 0;
}
```

Question No: 36 (Marks: 5)
Write the code of "break point interrupt routine".
Ans:
Breakpoint interrupts service routine :

```
debugISR:        push bp
        mov  bp, sp          ; ................to read cs, ip and flags
        push ax
        push bx
        push cx
        push dx
        push si
        push di
        push ds
        push es

        sti                  ;........................ waiting for keyboard interrupt
        push cs
        pop  ds              ;....................... initialize ds to data segment

        mov  ax, [bp+4]
        mov  es, ax          ; ....................load interrupted segment in es
        dec  word [bp+2]     ; ..................decrement the return address
```

```
        mov  di, [bp+2]          ;..................... read the return address in di
        mov  word [opcodepos], di ;............ remember the return position
        mov  al, [opcode]        ; .............load the original opcode
        mov  [es:di], al         ;............. restore original opcode there

        mov  byte [flag], 0      ; ............set flag to wait for key
        call clrscr              ;................ clear the screen

        mov  si, 6               ; .............first register is at bp+6
        mov  cx, 12              ;............ total 12 registers to print
        mov  ax, 0               ; .............start from row 0
        mov  bx, 5               ; .............print at column 5

      push ax                    ; ....................row number
        push bx                  ;................... column number
        mov  dx, [bp+si]
        push dx                  ;................... number to be printed
        call printnum            ;................. print the number
        sub  si, 2               ; ...................point to next register
        inc  ax                  ; ....................next row number
        loop l3                  ; ...................repeat for the 12 registers

        mov  ax, 0               ; ....................start from row 0
        mov  bx, 0               ; ....................start from column 0
        mov  cx, 12              ; .......................total 12 register names
        mov  si, 4               ;........................ each name length is 4 chars
        mov  dx, names           ; .......................offset of first name in dx

        push ax                  ;............................ row number
        push bx                  ; ...........................column number
        push dx                  ; ............................offset of string
        push si                  ; ..............................length of string
        call printstr            ; ..............................print the string
        add  dx, 4               ;............................... point to start of next string
        inc  ax                  ; ................................new row number
        loop l1                  ;................................... repeat for 12 register names

        or word [bp+6], 0x0100   ; .......................set TF in flags image on stack

keywait:    cmp  byte [flag], 0      ;......................... has a key been pressed
        je   keywait             ;            ....................... no, check again

        pop es

        pop ds
        pop di
        pop si
        pop dx
        pop cx
        pop bx
        pop ax
        pop bp
        iret
```

```
start:    xor  ax, ax
          mov  es, ax              ;          ......................point es to IVT base
          mov  word [es:1*4], trapisr ;..................... store offset at n*4
          mov  [es:1*4+2], cs      ;      ......................store segment at n*4+2
          mov  word [es:3*4],            ......................debugisr ; store offset at n*4
          mov  [es:3*4+2], cs      ;      ......................store segment at n*4+2
          cli                      ;                ....................disable interrupts
          mov  word [es:9*4], kbisr ; ......................store offset at n*4
          mov  [es:9*4+2], cs      ; .......................store segment at n*4+2
          sti                      ;           .......................enable interrupts
```

==========

Set-04

Question No: 19 (Marks: 2)
Explain the fuction of rotate right (ROR) instruction
Answer:
Rotate Right (ROR)
In the rotate right operation every bit moves one position to the right and the bit dropped from the right is inserted at the left. This bit is also copied into the carry flag. The operation can be understood by imagining that the **pipe used for shifting has been molded such that both ends coincide.** Now when the first ball is forced to move forward, every ball moves one step forward with the last ball entering the pipe from its other end occupying the first ball's old position. The carry basket takes a snapshot of this ball leaving one end of the pipe and entering from the other.see the figure for details.

Question No: 20 (Marks: 2)
Describe the PUSH function
Answer:
Check Midterm File for answer.

Question No: 21 (Marks: 3)
Write down the names of four segment registers?
Answer:
CS code Segment
DS data Segment
ES Extra Segment
SS Stack Segment.

Question No: 22 (Marks: 3)
For what purpose "INT 4" is reserved?
Answer:

Question No: 23 (Marks: 5)
Given that [BX+0x0100] BX=0x0100 Ds=0xFFF0
Calculate the physical address

Answer:

Question No: 17 (Marks: 2)
What is difference between SHR and SAR instructions?
SHR
The SHR inserts a zero from the left and moves every bit one position to the right and copy the rightmost bit in the carry flag.
SAR
The SAR shift every bit one place to the right with a copy of the most significant bit left at the most significant place. The bit dropped from the right is caught in the carry basket. The sign bit is retained in this operation.

Question No: 18 (Marks: 2)
For what purpose "**INT 1**" is reserved ?
Answer:
Check Midterm File for answer.

Question No: 19 (Marks: 2)
Define implied operand?
Answer:
It is always in a particular register say the accumulator. It needs to not be mentioned in the instruction.

==========

Set-05

Question No: 33 (Marks: 2)
INT 14 - SERIAL - READ CHARACTER FROM PORT
By using above port what do AH,AL and DX shows here?
Answer:

INT 14 - SERIAL - READ CHARACTER FROM PORT
AH = 02h
DX = port number (00h-03h)
Return:
AH = line status
AL = received character if AH bit 7 clear

Question No: 34 (Marks: 2)
What do these instructions do ? write your answer in single line.
mov cx, 0xffff
loop $
Answer:
1- ; load maximum number in cx
2- ; repeat ffff times

Question No: 35 (Marks: 3)
Define the protected mode
Answer:
Till now we have been discussing the 8088 architecture which was a 16bit processor. Newer processors of the Intel series provide 32bit architecture. Till now we were in real

mode of a newer processor which is basically a compatibility mode making the newer processor just a faster version of the original 8088. Switching processor in the newer 32bit mode is a very easy task. Just turn on the least significant bit of a new register called CR0 (Control Register 0) and the processor switches into 32bit mode called protected mode. However manipulations in the protected mode are very different from those in the read mode.
All registers in 386 have been extended to 32bits. The new names are EAX, EBX, ECX, EDX, ESI, EDI, ESP, EBP, EIP, and EFLAGS. The original names refer to the lower 16bits of these registers. A 32bit address register can access upto 4GB of memory so memory access has increased a lot. As regards segment registers the scheme is not so simple. First of all we call them segment selectors instead of segment registers and they are still 16bits wide. We are also given two other segment selectors FS and GS for no specific purpose just like ES.

Question No: 36 (Marks: 3)
Write a program in assembly language to disable keyboard interrupt using PIC mask register
Hint: Only five instructions are needed
Answer:

```
; disable keyboard interrupt in PIC mask register
    [org 0x0100]
in al, 0x21 ; read interrupt mask register
or al, 2 ; set bit for IRQ2
out 0x21, al ; write back mask register
mov ax, 0x4c00 ; terminate program
int 0x21
```

Question No: 37 (Marks: 3)
Read the following passage carefully and fill the blanks with proper words.
Note: Don't rewrite the passage just write the words in same order.
"BIOS sees the disks as a combination of sectors, tracks, and....**head**...., as a raw storage device without concern to whether it is reading a file or directory. ...**Bios**..... provides the simplest and most powerful interface to the storage medium. However this raw storage is meaningless to the user who needs to store his files and organize them into.....**directories**..... . "
Answer:
Solved plz check.

==========

Set-06

Q no 41 Write down purpose of JNZ instruction? (2)
Answer:
The JNZ instruction is from the program control group and is a conditional jump, meaning that if the condition NZ is true (ZF=0) it will jump to the address mentioned and otherwise it will progress to the next instruction. It is a selection between two paths. If the condition is true go right and otherwise go left. Or we can say if the weather is hot, go this way, and if it is cold, go this way. Conditional jump is the most important instruction, as it gives the processor decision making capability, so it must be given a careful thought. Some processors call it branch, probably a more logical name for it, however the functionality is same. Intel chose to name it “jump.”

Q no 42 How many bytes floppy root directory entry has? (2)
Answer:

Q no 43 Write the programmer view of processor? (2)
Answer:

Q no 44 What is scheduler? (2)
Answer:
The space where all registers of a task are stored is called the process control block or PCB. Actual PCB contains a few more things that are not relevant to us now. INT 08 that is saving and restoring the registers is called the scheduler and the whole event is called a context switch.

Q no 45 Write the names of any two descriptor? (3)
Answer:
The working of segment registers as being multiplied by 10 and added into the offset for obtaining the physical address is totally changed. Now the selector is just an index into an array of segment descriptors where each descriptor describes the base, limit, and attributes of a segment. Role of selector is to select on descriptor from the table of descriptors and the role of descriptor is to define the actual base address. This decouples the selection and actual definition which is needed in certain protection mechanisms introduced into this processor. For example an operating system can define the possible descriptors for a program and the program is bound to select one of them and nothing else. This sentence also hints that the processor has some sense of programs that can or cannot do certain things like change this table of descriptors. This is called the privilege level of the program and varies for 0 (highest privilege) to 3 (lowest privilege). The format of a selector is shown below.
The table index (TI) is set to 0 to access the global table of descriptors called the GDT (Global Descriptor Table). It is set to 1 to access another table, the local descriptor table (LDT) that we will not be using. RPL is the requested privilege level that ranges from 0-3 and informs what privilege level the program wants when using this descriptor. The 13bit index is the actual
index into the GDT to select the appropriate descriptor. 13 bits mean that a maximum of 8192 descriptors are possible in the GDT.
The GDT itself is an array of descriptors where each descriptor is an 8byte entry. The base and limit of GDT is stored in a 48bit register called the GDTR. This register is loaded with a special instruction LGDT and is given a memory address from where the 48bits are fetched. The first entry of the GDT must always be zero. It is called the null descriptor. After that any number of entries upto a maximum of 8191 can follow. The format of a code and data descriptor is shown below.

Q no 46 Define the protected mode? (3)
Answer:
Answered above.

Q no 47 Write the algorithm of multiplication of two 4 bits number? (3)
Answer:
Formulating the steps of the algorithm we get:
• Shift the multiplier to the right.
• If CF=1 add the multiplicand to the result.
• Shift the multiplicand to the right.
• Repeat the algorithm 4 times.

Q no 48 How threads are register in the scheduler? (3)
Answer:
In our next example we will save all 14 registers and the stack as well. 28 bytes are needed by these registers in the PCB. We add some more space to make the size 32, a power of 2 for easy calculations. One of these words is used to form a linked list of the PCBs so that strict ordering of active PCBs is not necessary. Also in this example we have given every thread its own stack.
Now threads can have function calls, parameters and local variables etc.
Another important change in this example is that the creation of threads is now dynamic. The thread registration code initializes the PCB, and adds it to the linked list so that the scheduler will give it a turn.
When the program is executed the threads display the numbers independently. However as keys are pressed and new threads are registered, there is an obvious slowdown in the speed of multitasking. To improve that, we can change the timer interrupt frequency. The following can be used to set to an approximately 1ms interval.
mov ax, 1100
out 0x40, al
mov al, ah
out 0x40, al
This makes the threads look faster. However the only real change is that the timer interrupt is now coming more frequently.

Q no 49 INT 14 serial with character to port (5)
AH=……
AL=……
AX=……
Answer:
INT 14 - SERIAL - WRITE CHARACTER TO PORT
AH = 01h
AL = character to write
DX = port number (00h-03h)
Return:
AH bit 7 = error flag
AH bits 6-0 = port status

Q no 50 Define the debugger. How to run the debugger tell the command, and all its parts? (5)
Answer:
The use of the trap flag has been deferred till now. The three flags not used for mathematical operations are the direction flag, the interrupt flag and the trap flag. The direction and interrupt flags have been previously discussed.
If the interrupt flag is set, the after every instruction a type 1 interrupt will be automatically generated. When the IVT and reserved interrupts were discussed this was named as the single step interrupt. This is like the divide by zero interrupt which was never explicitly invoked but it came itself. The single step interrupt behaves in the same manner.
The debugger is made using this interrupt. It allows one instruction to be executed and then return control to us. It has its display code and its code to wait for the key in the INT 1 handler. Therefore after every instruction the values of all registers are shown and the debugger waits for a key. Another interrupt used by the debugger is the break point interrupt INT 3. Apart from single stepping debugger has the breakpoint feature. INT 3 is used for this feature. INT 3 has a single byte opcode so it can replace any instruction. To

put a breakpoint the instruction is replaced with INT 3 opcode and restored in the INT 3 handler. The INT 3 opcode is placed again by a single step interrupt that is set up for this purpose after the replaced instruction has been executed.

Q no 51 Write the code of "break point interrupt routine"? (5)

Answer:

```
; elementary debugger using breakpoint interrupt
[org 0x0100]
jmp start
        flag: db 0 ; flag whether a key pressed
        oldisr: dd 0 ; space for saving old ISR
        names: db 'FL =CS =IP =BP =AX =BX =CX =DX =SI =DI =DS =ES ='
        opcode: db 0
        opcodepos: dw 0
        ;;;;; COPY LINES 008-025 FROM EXAMPLE 6.2 (clrscr) ;;;;;
        ;;;;; COPY LINES 028-071 FROM EXAMPLE 10.1 (printnum) ;;;;;
        ;;;;; COPY LINES 073-114 FROM EXAMPLE 10.1 (printstr) ;;;;;
        ;;;;; COPY LINES 116-128 FROM EXAMPLE 10.1 (kbisr) ;;;;;
; single step interrupt service routine
trapisr: push bp
        mov bp, sp
        push ax
        push di
        push ds
        push es
        push cs
        pop ds ; initialize ds to data segment
        mov ax, [bp+4]
        mov es, ax ; load interrupted segment in es
        mov di, [opcodepos] ; load saved opcode position
        mov byte [es:di], 0xCC ; reset the opcode to INT3
        and word [bp+6], 0xFEFF; clear TF in flags on stack
        pop es
        pop ds
        pop di
        pop ax
        pop bp
        iret
; breakpoint interrupt service routine
        debugisr: push bp
        mov bp, sp ; to read cs, ip and flags
        push ax
        push bx
        push cx
        push dx
        push si
        push di
        push ds
        push es
        sti ; waiting for keyboard interrupt
        push cs
        pop ds ; initialize ds to data segment
```

```
mov ax, [bp+4]
mov es, ax ; load interrupted segment in es
dec word [bp+2] ; decrement the return address
mov di, [bp+2] ; read the return address in di
mov word [opcodepos], di ; remember the return position
mov al, [opcode] ; load the original opcode
mov [es:di], al ; restore original opcode there
mov byte [flag], 0 ; set flag to wait for key
call clrscr ; clear the screen
mov si, 6 ; first register is at bp+6
mov cx, 12 ; total 12 registers to print
mov ax, 0 ; start from row 0
mov bx, 5 ; print at column 5
l3: push ax ; row number
push bx ; column number
mov dx, [bp+si]
push dx ; number to be printed
call printnum ; print the number
sub si, 2 ; point to next register
inc ax ; next row number
loop l3 ; repeat for the 12 registers
mov ax, 0 ; start from row 0
mov bx, 0 ; start from column 0
mov cx, 12 ; total 12 register names
mov si, 4 ; each name length is 4 chars
mov dx, names ; offset of first name in dx
l1: push ax ; row number
push bx ; column number
push dx ; offset of string
push si ; length of string
call printstr ; print the string
add dx, 4 ; point to start of next string
inc ax ; new row number
loop l1 ; repeat for 12 register names
or word [bp+6], 0x0100 ; set TF in flags image on stack
keywait: cmp byte [flag], 0 ; has a key been pressed
je keywait ; no, check again
pop es
pop ds
pop di
pop si
pop dx
pop cx
pop bx
pop ax
pop bp
iret
start: xor ax, ax
mov es, ax ; point es to IVT base
mov word [es:1*4], trapisr ; store offset at n*4
mov [es:1*4+2], cs ; store segment at n*4+2
mov word [es:3*4], debugisr ; store offset at n*4
mov [es:3*4+2], cs ; store segment at n*4+2
cli ; disable interrupts
```

```
mov word [es:9*4], kbisr ; store offset at n*4
mov [es:9*4+2], cs ; store segment at n*4+2
sti ; enable interrupts
mov si, l2 ; load breakpoint position in si
mov al, [cs:si] ; read opcode at that position
mov [opcode], al ; save opcode for later use
mov byte [cs:si], 0xCC ; change opcode to INT3
; breakpoint is set now, INT3 will come at l2 on every iteration
; sample code to check the working of our elementary debugger
mov ax, 0
mov bx, 0x10
mov cx, 0x20
mov dx, 0x40
l2: inc ax
add bx, 2
dec cx
sub dx, 2
jmp l2
```

Q no 52 Describe the format of interrupt descriptor? (5)

Answer:

Handling interrupts in protected mode is also different. Instead of the IVT at physical address 0 there is the IDT (interrupt descriptor table) located at physical address stored in IDTR, a special purpose register. The IDTR is also a 48bit register similar in structure to the GDTR and loaded with another special instruction LGDT. The format of the interrupt descriptor is as shown below.

interrupt gate descriptor																																
offset	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
+4	OFFSET (bit31..16)																P	DPL		S = 0	D	G = 1	10		reserved							
+0	CS selector																OFFSET (bit15..0)															

The P and DPL have the same meaning as in data and code descriptors. The S bit tells that this is a system descriptor while the 1110 following it tells that it is a 386 interrupt gate. Our example hooks the keyboard and timer interrupts and displays certain things on the screen to show that they are working.

==========

Set-07

Which register is used by GDT (Global Descriptor Table) to store its base and limit ?

Answer:

The GDT itself is an array of descriptors where each descriptor is an 8byte entry. The base and limit of GDT is stored in a 48bit register called the GDTR.

How to switching processor in 32 bit mode in 8088 architecture?
Answer:

Define context switching.
Answer:
The space where all registers of a task are stored is called the process control block or PCB. Actual PCB contains a few more things that are not relevant to us now. INT 08 that is saving and restoring the registers is called the scheduler and the whole event is called a context switch.

Write the name three flags which are not used for mathematical operations.
Answer:
The three flags not used for mathematical operations are the direction flag, the interrupt flag and the trap flag. The direction and interrupt flags have been previously discussed.
If the interrupt flag is set, the after every instruction a type 1 interrupt will be automatically generated. When the IVT and reserved interrupts were discussed this was named as the single step interrupt. This is like the divide by zero interrupt which was never explicitly invoked but it came itself. The single step interrupt behaves in the same manner.

Read the following passage carefully and fill the blanks with proper words.
Note: Don't rewrite the passage just write the words in same order.

"BIOS sees the disks as a combination of sectors, tracks, and....., as a raw storage device without concern to whether it is reading a file or directory. ..... provides the simplest and most powerful interface to the storage medium. However this raw storage is meaningless to the user who needs to store his files and organize them into..... . "
Answer:

Write the names of any two descriptors.
Answer:

Write a program to add 5 no's using register+ offset addressing
Answer:

```
; a program to add ten numbers using register + offset addressing
[org 0x0100]
mov bx, 0 ; initialize array index to zero
mov cx, 10 ; load count of numbers in cx
mov ax, 0 ; initialize sum to zero
l1: add ax, [num1+bx] ; add number to ax
add bx, 2 ; advance bx to next index
sub cx, 1 ; numbers to be added reduced
jnz l1 ; if numbers remain add next
mov [total], ax ; write back sum in memory
mov ax, 0x4c00 ; terminate program
```

int 0x21
num1: dw 10, 20, 30, 40, 50, 10, 20, 30, 40, 50
total: dw 0

What is the difference between Near jump and Far jump
Answer:
There are three types of unconditional jumps

Short jumps

Near jumps

Far jumps

Their range calculation is as follows

The short jump is 2-byte instructions allow jumps or branches to memory locations with in +127 and -128 bytes from the address following the jump. This is the limitation of a byte in singed representation.

Near jump is a 3-byte instructions allow a branch or jump within ±32K bytes (or anywhere in the current segment) from the instructions in the current code segment.

Finally the 5-byte far jump allows a jump to any memory location within the real memory system

The short and near jumps are often called intra segment jumps and far jumps are often called inter segment jumps

What information is required to be provided for the service "**INT 14 - SERIAL - WRITE CHARACTER TO PORT**" in the following registers
AH = ...
AL = ...
DX =.....
Answer:
Answered above.

Write the details of two services from the chargen subset of video services.
Answer:
Chargen Services
In our first example we will read the font definition in memory and change it to include a set of all on pixels in the last line showing an effect of underline on all character including space. An 8x16 font is stored in 16 bytes. A sample character and the corresponding 16 values stored in the font information are shown for the character 'A'. We start with two services from the chargen subset of video services that we are going to use.
INT 10 - VIDEO - GET FONT INFORMATION
AX = 1130h
BH = pointer specifier
Return:
ES:BP = specified pointer
CX = bytes/character of on-screen font

DL = highest character row on screen
INT 10 - TEXT-MODE CHARGEN
AX = 1110h
ES:BP -> user table
CX = count of patterns to store
DX = character offset into map 2 block
BL = block to load in map 2
BH = number of bytes per character pattern

Write the code of “break point interrupt routine”.
Answer:
Answered above.

==========

Set-08

Question No: 27 (Marks: 2)
What are device drivers? give your answer in two to three lines.
Answer:
Device drivers are operating system extensions that become part of the operating system and extend its services to new devices. Device drivers in DOS are very simple. They just have their services exposed through the file system interface.

Question No: 28 (Marks: 2)
For what purpose "INT 1" is reserved ?
Answer:
See Mid term File.

Question No: 29 (Marks: 2)
How interrupts are handled in protected mode.
Answer:
Answered above

Question No: 30 (Marks: 2)
Which bit of acknowledge is used to generate IRQ7
Answer:
The parallel port connector is a 25pin connector called DB-25. Different pins of this connector have different meanings. Some are meaningful only with the printer**. This is a bidirectional port so there are some pins to take data from the processor to the parallel port and others to take data from the parallel port to the processor. Important pins for our use are the data pins from pin 2 to pin 9 that take data from the processor to the device. Pin 10, the ACK pin, is normally used by the printer to acknowledge the receipt of data and show the willingness to receive more data. Signaling this pin generates IRQ 7 if enabled in the PIC and in the parallel port controller. Pin 18-25 are ground and must be connected to the external circuit ground to provide the common reference point otherwise they won’t understand each other voltage levels. Like the datum point in a graph this is the datum point of an electrical circuit. The remaining pins are not of our concern in these

examples.
This is the external view of the parallel port. The processor cannot see these pins. The processor uses the I/O ports of the parallel port controller. The first parallel port LPT1†† has ports designated from 378 to 37A. The first port 378 is the data port. If we use the OUT instruction on this port, 1 bits result in a 5V signal on the corresponding pin and a 0 bits result in a 0V signal on the corresponding pin.

Question No: 31 (Marks: 3)
Write the name three flags which are not used for mathematical operations.
Answer:
Answered above

Question No: 32 (Marks: 3)
"INT 13 - DISK - GET DRIVE PARAMETERS " uses which registers to return error flag and error number.
Answer:
INT 13 - DISK - GET DRIVE PARAMETERS
AH = 08h
DL = drive (bit 7 set for hard disk)
Return:
CF = error flag
AH = error code
CH = low eight bits of maximum cylinder number
CL = maximum sector number (bits 5-0)

Question No: 33 (Marks: 3)
Who is responsible for removing the parameter from the stack when we call a function in C and Pascal?
Answer:

Question No: 34 (Marks: 5)
Read the passage carefully and choose proper word for each blank space from the list given below .

In descriptors the 32bit base is scattered into different places because of compatibility reasons. The limit is stored in 20 bits but the .....defines that the limit is in terms of bytes of 4K pages therefore a maximum of 4GB size is possible. The ..... must be set to signal that this segment is present in memory. DPL is the descriptor privilege level again related to the protection levels in 386. ..... defines that this segment is to execute code is 16bit mode or 32bit mode. ..... is conforming bit that we will not be using. .....signals that the segment is readable. A bit is automatically set whenever the
segment is accessed.

(A bit, C bit, G bit, D bit, P bit , R bit, B bit)
Answer:
The 32bit base in both descriptors is scattered into different places because of compatibility reasons. The limit is stored in 20 bits but the G bit

defines that the limit is in terms of bytes of 4K pages therefore a maximum of 4GB size is possible. The P bit must be set to signal that this segment is present in memory. DPL is the descriptor privilege level again related to the protection levels in 386. D bit defines that this segment is to execute code is 16bit mode or 32bit mode. C is conforming bit that we will not be using. R signals that the segment is readable. A bit is automatically set whenever the segment is accessed.

Question No: 35 (Marks: 5)
Write assembly language instructions to set the timer interrupt frequency at 1 ms.
Answer:
When the program is executed the threads display the numbers independently. However as keys are pressed and new threads are registered, there is an obvious slowdown in the speed of multitasking. To improve that, we can change the timer interrupt frequency. The following can be used to set to an approximately 1ms interval.

```
mov ax, 1100
out 0x40, al
mov al, ah
out 0x40, al
```

This makes the threads look faster. However the only real change is that the timer interrupt is now coming more frequently.

Question No: 36 (Marks: 5)
In the context of " INT 13 - DISK - WRITE DISK SECTOR(S)" fill the blanks by choosing the correct answer against each blank space from the list given at the bottom.

AH = ...
AL = ...
CH = ...
CL = sector number 1-63 (bits 0-5)
high two bits of cylinder (bits 6-7, hard disk only)
DH = ...
DL = drive number (bit 7 set for hard disk)
ES:BX -> .....

(Number of sectors to write, head number , 03h, data buffer , low eight bits of cylinder number)
Answer:
We will be using BIOS disk services to directly see the data stored in the directory entries by DOS. For this purpose we will be using the BIOS disk services.
INT 13 - DISK - RESET DISK SYSTEM
AH = 00h
DL = drive
Return:
CF = error flag
AH = error code
INT 13 - DISK - READ SECTOR(S) INTO MEMORY
AH = 02h
AL = number of sectors to read (must be nonzero)
CH = low eight bits of cylinder number

CL = sector number 1-63 (bits 0-5)
high two bits of cylinder (bits 6-7, hard disk only)
DH = head number
DL = drive number (bit 7 set for hard disk)
ES:BX -> data buffer
Return:
CF = error flag
AH = error code
AL = number of sectors transferred

INT 13 - DISK - WRITE DISK SECTOR(S)

AH = 03h
AL = number of sectors to write (must be nonzero)
CH = low eight bits of cylinder number
CL = sector number 1-63 (bits 0-5)
high two bits of cylinder (bits 6-7, hard disk only)
DH = head number
DL = drive number (bit 7 set for hard disk)
ES:BX -> data buffer
Return:
CF = error flag
AH = error code
AL = number of sectors transferred

INT 13 - DISK - GET DRIVE PARAMETERS

AH = 08h
DL = drive (bit 7 set for hard disk)
Return:
CF = error flag
AH = error code
CH = low eight bits of maximum cylinder number
CL = maximum sector number (bits 5-0)
high two bits of maximum cylinder number (bits 7-6)
DH = maximum head number
DL = number of drives
ES:DI -> drive parameter table (floppies only)

==========

Set-09

Question No: 21 (Marks: 2)

Write brief about INT 13 – Extended READ SERVICES

Answer:

We will be using BIOS disk services to directly see the data stored in the directory entries by DOS. For this purpose we will be using the BIOS disk services.

INT 13 - DISK - RESET DISK SYSTEM
INT 13 - DISK - READ SECTOR(S) INTO MEMORY
INT 13 - DISK - WRITE DISK SECTOR(S)
INT 13 - DISK - GET DRIVE PARAMETERS

Question No: 22 (Marks: 2)

What is Interrupt flag?

Answer:

It tells whether the processor can be interrupted from outside or not. Sometimes the programmer doesn't want a particular task to be interrupted so the
Interrupt flag can be zeroed for this time. The programmer rather than the processor sets this flag since the programmer knows when interruption is okay and when it is not. Interruption can be disabled or enabled by making this bit zero or one, respectively, using special instructions.

Question No: 23 (Marks: 3)
Give the name of any two descriptors
Answer:

Question No: 24 (Marks: 3)
It is the part of Multitasking TSR caller, what will do these instructions comment against them (3)
Mov al, [chars+bx]
Mov [es:40],al
Inc bx
Answer:
Answered above

Question No: 25 (Marks: 5)
Write Data Movement and Arithmetic Instructions of Motorola 68 K Processor.
Answer:

Question No: 26 (Marks: 5)
Write assembly program for "Break Interrupt Service Routine"
Answer:
Answered above

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Set-10

==========

Set-11

Question No: 17 (Marks: 1)
Write any two control instructions.
Answer:
cmp ax, 0
jne 1234

Question No: 18 (Marks: 1)
RET instruction take how many arguments
Answer:
No argument.

Question No: 19 (Marks: 2)

Explain the fuction of rotate right (ROR) instruction
Answer:
See Midterm File.

Question No: 20 (Marks: 2)
Describe the PUSH function
Answer:
See Mid Term File.

Question No: 21 (Marks: 3)
Write down the names of four segment registers?
Answer:
See Midterm File

Question No: 22 (Marks: 3)
For what purpose "INT 4" is reserved?
Answer:

Question No: 17 (Marks: 2)
What is difference between SHR and SAR instructions?
Answer:
SHR
The SHR inserts a zero from the left and moves every bit one position to the right and copy the rightmost bit in the carry flag.
SAR
The SAR shift every bit one place to the right with a copy of the most significant bit left at the most significant place. The bit dropped from the right is caught in the carry basket. The sign bit is retained in this operation.

Question No: 19 (Marks: 2)
Define implied operand?
An implied operand means that it is always in a particular register say the accumulator. It needs to not be mentioned in the instruction.

Question No: 31 __ (Marks: 1)
Which services are gained bi INT 0x16
Solution:
BIOS KEY BOARD SRVICES

Question No: 32 (Marks: 1
Give the name of any one VESA service
Answer:

Question No: 33 (Marks: 2)
INT 14 - SERIAL - READ CHARACTER FROM PORT
By using above port what do AH,AL and DX shows here?

Answer:
INT 14 - SERIAL - READ CHARACTER FROM PORT
AH = 02h
DX = port number (00h-03h)
Return:
AH = line status
AL = received character if AH bit 7 clear

Question No: 34 (Marks: 2)
What do these instructions do ? write your answer in single line.
mov cx, 0xffff
loop $
Answer:
1- ; load maximum number in cx
2- ; repeat ffff times

Question No: 35 (Marks: 3)
Define the protected mode
Answer:
Answered Above.

Question No: 36 (Marks: 3)
Write a program in assembly language to disable keyboard interrupt using PIC mask register
Hint: Only five instructions are needed
Answer:
```
; disable keyboard interrupt in PIC mask register
[org 0x0100]
in al, 0x21 ; read interrupt mask register
or al, 2 ; set bit for IRQ2
out 0x21, al ; write back mask register
mov ax, 0x4c00 ; terminate program
int 0x21
```

==========

Set-12

Question:

Answer:

==========

Set-13

Question:

Answer:

==========

Multiple Choice Question

Set-01

Question No: 1 (Marks: 1) - Please choose one

Suppose AL contains 5 decimal then after two left shifts produces the value as

- ► 5
- ► **10**
- ► 15
- ► 20

Question No: 2 (Marks: 1) - Please choose one

In graphics mode a location in video memory corresponds to a _____ on the screen.

- ► line
- ► **dot**
- ► circle
- ► rectangle

Question No: 3 (Marks: 1) - Please choose one

Creation of threads can be

- ► static
- ► **dynamic**
- ► easy
- ► difficult

Question No: 4 (Marks: 1) - Please choose one

The thread registration code initializes the PCB and adds it to the linked list so that the _____ will give it a turn.

- ► assembler
- ► **scheduler**
- ► linker
- ► debugger

Question No: 5 (Marks: 1) - Please choose one

VESA VBE 2.0 is a standard for

- ► **High resolution Mode**
- ► Low resolution Mode
- ► Medium resolution Mode
- ► Very High resolution Mode

Question No: 6 (Marks: 1) - Please choose one

Which of the following gives the more logical view of the storage medium

- ► BIOS
- ► **DOS**
- ► Both
- ► None

Question No: 7 (Marks: 1) - Please choose one

Which of the following IRQs is derived by a key board?

- ► IRQ 0
- ► **IRQ 1**
- ► IRQ 2
- ► IRQ 3

Question No: 8 (Marks: 1) - Please choose one

Which of the following IRQs is used for Floppy disk derive?

- ► IRQ 4
- ► IRQ 5
- ► **IRQ 6**
- ► IRQ 7

Question No: 9 (Marks: 1) - Please choose one
Which of the following pins of a parallel port connector are grounded?

- ► 10-18
- ► **18-25**
- ► 25-32
- ► 32-39

Question No: 10 (Marks: 1) - Please choose one
The physical address of IDT(Interrupt Descriptor Table) is stored in _____

- ► GDTR
- ► **IDTR**
- ► IVT
- ► IDTT

Question No: 11 (Marks: 1) - Please choose one
In NASM an imported symbol is declared with the ..... while and exported symbol is declared with the .....

- ► Global directive, External directive
- ► **External directive, Global directive**
- ► Home Directive, Foreign Directive
- ► Foreign Directive, Home Directive

Question No: 12 (Marks: 1) - Please choose one
In 68K processors there is a ..... program counter (PC) that holds the address of currently executing instruction

- ► 8bit
- ► 16bit
- ► **32bit**
- ► 64bit

Question No: 13 (Marks: 1) - Please choose one
To reserve 8-bits in memory ___ directive is used.

- ► **db (8 bit)**
- ► dw (16 bit)
- ► dn (4 bit)
- ► dd (32 bit)

Question No: 14 (Marks: 1) - Please choose one
In the "mov ax, 5" 5 is the _____ operand.

- ► **source**
- ► destination
- ► memory
- ► register

Question No: 15 (Marks: 1) - Please choose one
RETF will pop the segment address in the

- ► **CS register**
- ► DS register
- ► SS register

- ES register

Question No: 16 (Marks: 1) - Please choose one
For the execution of the instruction "DIV BL", the implied dividend will be stored in

- **AX**
- BX
- CX
- DX

Question No: 17 (Marks: 1) - Please choose one
When a number is divided by zero "A Division by 0" interrupt is generated. Which instruction is used for this purpose

- INT 0
- INT 1
- INT 2
- **This interrupt is generated automatically**

Question No: 18 (Marks: 1) - Please choose one
INT 21 service 01H is used to read character from standard input with echo. It returns the result in _____ register.

- **AL**
- BL
- CL
- BH

Question No: 19 (Marks: 1) - Please choose one
BIOS sees the disks as

- logical storage
- **raw storage**
- in the form of sectors only
- in the form of tracks only

Question No: 20 (Marks: 1) - Please choose one
In 9pin DB 9, which pin number is assigned to CD (Carrier Detect) ?

- **1**
- 2
- 3
- 4

Question No: 21 (Marks: 1) - Please choose one
In 9pin DB 9, Signal ground is assigned on pin number

- 4
- **5**
- 6
- 3

Question No: 22 (Marks: 1) - Please choose one
In 9pin DB 9, RI (Ring Indicator) is assigned on pin number

- 6
- 7
- 8
- **9**

Question No: 23 (Marks: 1) - Please choose one
Motorola 68K processors have ..... 23bit general purpose registers.
- ► 4
- ► 8
- ► **16**
- ► 32

Question No: 24 (Marks: 1) - Please choose one
When two devices in the system want to use the same IRQ line then what will happen?

- ► An IRQ Collision
- ► **An IRQ Conflict**
- ► An IRQ Crash
- ► An IRQ Blockage

Question No: 25 (Marks: 1) - Please choose one
In the instruction **MOV AX, 5** the number of operands are
- ► 1
- ► **2**
- ► 3
- ► 4

Question No: 26 (Marks: 1) - Please choose one
Which flags are NOT used for mathematical operations ?
- ► Carry, Interrupt and Trap flag.
- ► **Direction, Interrupt and Trap flag.**
- ► Direction, Overflow and Trap flag.
- ► Direction, Interrupt and Sign flag.

==========

Set-02

Question # 1 of 10 (Start time: 06:37:28 PM) Total Marks: 1
BP default associated with

Select correct option:

- CS
- IP
- SS

Correct:SS

SP

Click here to Save Answer & Move to Next Question

/w EWCgKMgIbuE

Question # 2 of 10 (Start time: 06:37:53 PM) Total Marks: 1

In direct addressing the memory address given in the instruction is

Select correct option:

Fixed

Variable

Register

Empty

Corrct:Empty

Click here to Save Answer & Move to Next Question

/w EWBgL8qcW9

Question # 3 of 10 (Start time: 06:38:12 PM) Total Marks: 1

Register to memory operation is not allowed

Select correct option:

True

False

Correct:False(only memory to memory not allowed)

Click here to Save Answer & Move to Next Question

Question # 4 of 10 (Start time: 06:38:29 PM) Total Marks: 1

Register to Register Operation is not allowed

Select correct option:

True

False

Correct:False(only memory to memory not allowed)

Click here to Save Answer & Move to Next Question

Question # 5 of 10 (Start time: 06:38:43 PM) Total Marks: 1

Group of bits processor uses to inform memory which element to read/write is collectively known as

Select correct option:

Control bus

Data bus

Correct:Data Buss

Address bus

RAM

Click here to Save Answer & Move to Next Question

Question # 6 of 10 (Start time: 06:38:59 PM) Total Marks: 1

The basic function of register is to

Select correct option:

Hold the operand

- Hold the operator
- Hold both the operator and operand
- None of the given

Click here to Save Answer & Move to Next Question

Question # 7 of 10 (Start time: 06:39:28 PM) Total Marks: 1

which type of rotation it is "The carry flag is inserted from the left, every bit moves one position to the right, and the right most bit is dropped in the carry flag. "

Select correct option:

- RCR
- ROL
- RCL

Correct:RCL

- ROR

Click here to Save Answer & Move to Next Question

Question # 8 of 10 (Start time: 06:39:34 PM) Total Marks: 1

mov [bx+si], ax is an example of Indexed Register Indirect.

Select correct option:

- True

False

Correct:False

Click here to Save Answer & Move to Next Question

Question # 9 of 10 (Start time: 06:39:48 PM) Total Marks: 1

Register whose each bit specify a different meaning is

Select correct option:

Accumulator Register

Pointer Register

Index register

Flag register

Correct:Flag Register

Click here to Save Answer & Move to Next Question

/wEWCgLEveDg

Question # 10 of 10 (Start time: 06:40:04 PM) Total Marks: 1

Motorola follow

Select correct option:

Big endian

Correct:Big Endian

Litten endain

Both of them

None of the given

Click here to Save Answer & Move to Next Question

==========

Set-03

Question # 1 of 10 (Start time: 09:24:03 AM) Total Marks: 1
Constant is never use as a

Source
Destination
Both are source
None of the given

Question # 2 of 10 (Start time: 09:25:15 AM) Total Marks: 1
The operation of CMP is to Subtract source from destination

True
Flase

Data bus is
uni - deirectional
bi-directional
non-directional
none of given

Quiz Start Time: 09:24 AM Time Left 87 sec(s)
Question # 4 of 10 (Start time: 09:27:17 AM) Total Marks: 1
unconditional jump can be
near
short
far
all of the given

Quiz Start Time: 09:24 AM Time Left 88 sec(s)
Question # 5 of 10 (Start time: 09:28:34 AM) Total Marks: 1
BP by default associated with

CS
IP
SS
SP

Question # 6 of 10 (Start time: 09:29:51 AM) Total Marks: 1
Which type of shifting is "Inserts a zero from the left and moves every bit one position to the right and copies the rightmost bit in the carry flag."
SHL
SAL
SAR
None of the given

Question 7 out 10
we can not Subtracter index register from the base register(bx-si) in assembly language

True
Flase

Question # 9 of 10 (Start time: 09:32:58 AM) Total Marks: 1
Address is alway go from
Procesor to Memeory
Memeory to Processor
Memory to Memory
None of the given

Question # 10 of 10 (Start time: 09:33:59 AM) Total Marks: 1
In direct addressing the memory address given in the instruction is
Fixed
Variable
Registerd
Empty

==========

Set-04

/w EWCgKls7uPD

Question # 5 of 10 (Start time: 12:18:29 AM) Total Marks: 1

The root directory of floppy contains _____ fixed entries

Select correct option:

- 64
- 256
- 128
- 512

2

Click here to Save Answer & Move to Next Question

Question # 6 of 10 (Start time: 12:19:53 AM) Total Marks: 1

Operating system Organize data in the form of

Select correct option:

- Folder
- Batch file
- File
- None of the above

Click here to Save Answer & Move to Next Question

Question # 1 of 10 (Start time: 12:26:37 AM) Total Marks: 1

Which register is generally used to specify the service number of an interrupt ?

Select correct option:

- DX x
- AX Correct:AX(AH)
- BX
- CX

Click here to Save Answer & Move to Next Question

/w EPDw UKMTY:

/w EWCgKm5o2u

Question # 1 of 10 (Start time: 12:26:37 AM) Total Marks: 1

Which register is generally used to specify the service number of an interrupt ?

Select correct option:

- DX

- AX
- BX
- CX

Click here to Save Answer & Move to Next Question

/w EPDw UKMTY:
/w EWCgKN7b+IE

Question # 2 of 10 (Start time: 12:27:58 AM) Total Marks: 1

The first sector on hard disk contains the

Select correct option:

- Hard disk size
- Partition table
- Data size
- Sector size

correct partition table

Click here to Save Answer & Move to Next Question

/w EPDw UKMTY:
/w EWCgLVtJSM

Question # 4 of 10 (Start time: 12:30:36 AM) Total Marks: 1

In the context of video services, if we want to write string then which of the value place in AH.

Select correct option:

- 10h

12h

11h

none of the above

Correct: None(13h)

Click here to Save Answer & Move to Next Question

/w EPDw UKMTY:

/w EWCgKS2KC(

Question # 6 of 10 (Start time: 12:32:54 AM) Total Marks: 1

The maximum length of DOS command line parameters is

Select correct option:

64 bits

127 bits

Correct:127

256 bits

512 bits

Click here to Save Answer & Move to Next Question

/w EPDw UKMTY:

/w EWCgL95bOw

Question # 9 of 10 (Start time: 12:35:33 AM) Total Marks: 1

On executing INT 0x21 service 0x3D, if file is successfully opened then

Select correct option:

CF will contain 1

CF will contain 0

ZF will contain 1

ZF will contain 0

Click here to Save Answer & Move to Next Question

/wEPDwUKMTY:

/wEWCgLgieyvC

Question # 10 of 10 (Start time: 12:36:06 AM) Total Marks: 1

BPB stands for

Select correct option:

Basic Parameter Block

Bios Precise Block

Basic Precise Block

Bios Parameter Block

correct :bios para block

Click here to Save Answer & Move to Next Question

/wEPDwUKMTY:

/wEWCgKjydHCE

Question # 5 of 10 (Start time: 12:47:37 AM) Total Marks: 1

The video services are exported via

Select correct option:

INT10

correct:int 10

INT9

INT8

INT7

Click here to Save Answer & Move to Next Question

/wEPDwUKMTY:

/wEWCgKUg7Ojl

Question # 6 of 10 (Start time: 12:48:43 AM) Total Marks: 1

Which register is generally used to specify the service number of an interrupt ?

Select correct option:

DX

AX

correct:AX

BX

CX

Click here to Save Answer & Move to Next Question

/wEPDwUKMTY:

/wEWCgLI3eerA

Question # 7 of 10 (Start time: 12:49:16 AM) Total Marks: 1

On executing INT 0x21 service 0x3D, if file is successfully opened then

Select correct option:

CF will contain 1

CF will contain 0

ZF will contain 1

ZF will contain 0

Click here to Save Answer & Move to Next Question

/wEPDwUKMTY:

/wEWCgKp1cPu.

Question # 8 of 10 (Start time: 12:49:35 AM) Total Marks: 1

In case of COM file, maximum length of parameters passed through command line can be ___

Select correct option:

63 bytes

127 bytes

correct 127

255 bytes

511 bytes

Click here to Save Answer & Move to Next Question

/wEPDwUKMTY:

/wEWCgL5scjqC

Question # 10 of 10 (Start time: 12:51:24 AM) Total Marks: 1

In DOS, if 'file name' is more than 8-characters then which flags of 'attribute byte' are set

Select correct option:

Directory flag and Hidden flag

- Directory flag and System flag
- System flag and Volume label flag
- Directory flag, Hidden flag, System flag and Volume

Click here to Save Answer & Move to Next Question

==========

Set-05

Quiz Start Time: 12:57 AM
Time Left 85
sec(s)
Question # 2 of 10 (Start time: 12:57:44 AM) Total Marks: 1
In case of COM file, first command line parameter is stored at ___ offset of 'program segment prefix'
Select correct option:

- **0x80**
- 0x82
- 0x84
- 0x86

Quiz Start Time: 12:57 AM
Time Left 46
sec(s)
Question # 3 of 10 (Start time: 12:58:18 AM) Total Marks: 1
The higher 16-bits of EAX register are labeled as:
Select correct option:

- AX
- EAH
- AH
- **None of the given options**

Quiz Start Time: 12:57 AM
Time Left 84
sec(s)
Question # 4 of 10 (Start time: 12:59:08 AM) Total Marks: 1
The 'program segment prefix' for com files is of size:
Select correct option:

- 64 bytes
- **128 bytes**
- 256 bytes
- 512 bytes

Quiz Start Time: 12:57 AM
Time Left 86
sec(s)
Question # 5 of 10 (Start time: 01:00:07 AM) Total Marks: 1

Device drivers can be divided into ___ major categories:
Select correct option:
5
4
3
2
Quiz Start Time: 12:57 AM
Time Left 84
sec(s)
Question # 6 of 10 (Start time: 01:00:26 AM) Total Marks: 1
A 32-bit address register can access up to ____ of memory.
Select correct option:
2 MB
2 GB
4 MB
4 GB
Quiz Start Time: 12:57 AM
Time Left 81
sec(s)
Question # 8 of 10 (Start time: 01:02:07 AM) Total Marks: 1
On executing INT 0x21--service 0x3D, if file can't be opened then
Select correct option:
CF will contain 1
CF will contain 0
ZF will contain 1
ZF will contain 0
Quiz Start Time: 12:57 AM
Time Left 85
sec(s)
Question # 9 of 10 (Start time: 01:02:28 AM) Total Marks: 1
The 'program segment prefix' is used to store:
Select correct option:
DOS information
Command tail
DOS information and Command tail
None of the given options

==========

Set-06

Question No: 1 (Marks: 1) - Please choose one

To transfer control back the RET instruction take

- 1 argument
- 1 argument
- 3 arguments

No arguments

Question No: 2 (Marks: 1) - Please choose one

In STOSB instruction SI is decremented or incremented by

4
1
2
3

Question No: 3 (Marks: 1) - Please choose one

CMPS instruction subtracts the source location to the destination location.
Destination location always lies in

DS:SI
DS:DI

ES:SI

ES:DI

Question No: 4 (Marks: 1) - Please choose one

Regarding assembler, which statement is true:

Assembler converts mnemonics to the corresponding OPCODE
Assembler converts OPCODE to the corresponding mnemonics Assembler executes the assembly code all at once
Assembler executes the assembly code step by step

Question No: 5 (Marks: 1) - Please choose one

If "BB" is the OPCODE of the instruction which states to "move a constant value to AX register", the hexadecimal representation (Using little Endian notation) of the instruction "Mov AX,336" ("150" in hexadecimal number system) will be:

0xBB0150
0x5001BB
0x01BB50
0xBB5001

Question No: 6 (Marks: 1) - Please choose one

In the instruction MOV AX, 5 the number of operands are

1
2
3
4

Question No: 7 (Marks: 1) - Please choose one

The maximum parameters a subroutine can receive (with the help of registers) are

6
7
8
9

Question No: 8 (Marks: 1) - Please choose one
In assembly the CX register is used normally as a _____register.

source
counter
index
pointer

Question No: 9 (Marks: 1) - Please choose one

All the addressing mechanisms in iAPX 8 8 return a number called _ _ _ _ _ _ _ _ _ _ _ _ _ address .

effective
faulty
indirect
direct

Question No: 10 (Marks: 1) - Please choose one

When a 16 bit number is divided by an 8 bit number, the dividend will be in
AX
BX
CX
DX

Question No: 11 (Marks: 1) - Please choose one
in Left-Shift-Operation the left most bit _____

will drop
will go into CF
Will come to the right most
will be always 1

Question No: 12 (Marks: 1) - Please choose one

Suppose the decimal number "35" after shifting its binary two bits to left, the new value becomes _____

35
70
140
17

Question No: 13 (Marks: 1) - Please choose one

When divide overflow occurs processor will be interrupted this type of interrupt is called
Hardware interrupt

Software interrupt

Processor exception

Logical interrupts

Question No: 14 (Marks: 1) - Please choose one

Which mathematical operation is dominant during the execution of SCAS instruction

Division

Multiplication

Addition

Subtraction

Question No: 15 (Marks: 1) - Please choose one

After the execution of REP instruction CX will be decremented then which of the following flags will be affected?

CF
OF
DF
No flags will be affected

Question No: 16 (Marks: 1) - Please choose one

_____ is one of the reasons due to which string instructions are used in 8088

Efficiency and accuracy

Reduction in code size and accuracy

Reduction in code size and speed

Reduction in code size and efficiency

Question No: 17 (Marks: 1)

Write any two control instructions.

Question No: 18 (Marks: 1)

RET instruction take how many arguments

==========

Set-07

Question No: 1 (Marks: 1) - Please choose one

_____ The physical address of the stack is obtained by

► **SS:SP combination**

► SS:SI combination

► **SS:SP combination**

► ES:BP combination

► ES:SP combination

Question No: 2 (Marks: 1) - Please choose one

_____ After the execution of instruction "RET "

► **SP is incremented by 2**

► **SP is incremented by 2**

► SP is decremented by 2

► SP is incremented by 1

► SP is decremented by 1

Question No: 3 (Marks: 1) - Please choose one

_____ The second byte in the word designated for one screen location holds

► **Character color on the screen**

► The dimensions of the screen

► Character position on the screen

► **Character color on the screen**

► ASCII code of the character

Question No: 4 (Marks: 1) - Please choose one

_____ REP will always

► **Decrement CX by 1**

► Increment CX by 1

► Increment CX by 2

► **Decrement CX by 1**

► Decrement CX by 2

Question No: 5 (Marks: 1) - Please choose one

_____ The basic function of SCAS instruction is to

► **Compare**

► **Compare**

► Scan

► Sort

► Move data

Question No: 6 (Marks: 1) - Please choose one

_____ Index registers are used to store _____

□□□□□□□□□□□□□□□►□**Address**

►□Data

□□□□□□□►□Intermediate result

□□□□□□□►□**Address**

□□□□□□□►□Both data and addresses

Question No: 7 (Marks: 1) - Please choose one

_____ The bits of the _____ work independently and individually

□□□□□□□□□□□□□□□►□**flags register**

►□index register

□□□□□□□►□base register

□□□□□□□►□**flags register**

□□□□□□□►□accumulator

Question No: 8 (Marks: 1) - Please choose one

_____ To convert any digit to its ASCII representation

► **Add 0x30 in the digit**

► **Add 0x30 in the digit**

► Subtract 0x30 from the digit

► Add 0x61 in the digit

► Subtract 0x61 from the digit

Question No: 9 (Marks: 1) - Please choose one

_____ When a 32 bit number is divided by a 16 bit number, the quotient is of

► **4 bits**
► 32 bits
► 16 bits
► 8 bits
► **4 bits**

Question No: 10 (Marks: 1) - Please choose one

When a 16 bit number is divided by an 8 bit number, the quotient will be in

► **AL**
► AX
► **AL**
► AH
► DX

Question No: 11 (Marks: 1) - Please choose one

Which mathematical operation is dominant during the execution of SCAS instruction

► **Division**
► **Division**

► Multiplication

► Addition

► Subtraction

Question No: 12 (Marks: 1) - Please choose one

If AX contains decimal -2 and BX contains decimal 2 then after the execution of instructions:
CMP AX, BX
JA label

► **Zero flag will set**
► Jump will be taken

► **Zero flag will set**

► ZF will contain value -4

► Jump will not be taken

Question No: 13 (Marks: 1) - Please choose one

The execution of the instruction "mov word [ES : 160], 0x1230" will print a character "0" on the screen at

► **First column of second row**
► Second column of first row
► **First column of second row**
► Second column of second row
► First column of third row

Question No: 14 (Marks: 1) - Please choose one

_____ If the direction of the processing of a string is from higher addresses towards lower addresses then

► **DF is cleared**

► ZF is cleared

► **DF is cleared**

► ZF is set

► DF is set

Question No: 15 (Marks: 1) - Please choose one

_____ The instruction ADC has_____ Operand(s)

► **3**

► 0

► 1

► 2

► **3**

Question No: 16 (Marks: 1) - Please choose one

Which bit of the attributes byte represents the red component of background color ?

► **3**

► **3**

► 4

► 5

► 6

==========

Set-08

Q=1:

Which bit of attributes byte represents the blue component of foreground color?

- 0
- 1
- 2
- 3

Q=2:

The clear screen operation initializes the whole block of video memory to:

- 0417
- 0714
- 0741
- 017

Q=3:
When the operand of DIV instruction is of 16 bit then implied dividend will be of

- 64-bit
- 32-bits
- 16-bits
- 8--bits

Q=4
Which of the following is the pair of register used to access memory instring instruction:

- DI and BP
- SI and BP
- DI and SI
- DS and Si

Q=5
A fat32 file system directory entry in DOS consist of how many bytes?

- 16
- 24
- 32
- 64

Q=6:
Which register is generally used to specify the services number of an interrupt?

DX
AX
BX
CX
……
Q=7:
In 9 pin db 9 connector ,which pin is assigned to RD(received data)

- 1
- 2
- 3
- 4

Q=8
In case of COM file, maximum length of parameters passed through command line can be…….

- 63 bytes
- 127bytes
- 255 bytes
- 511 bytes

Q=9
We can access the DOS service using;

- Int 0x21
- Int 0x13
- Int 0x 10
- Int 0x 08

Q=10
In 9 pin 9 connector,which pin is assigned to signal ground

- 3
- 4
- 5
- 6

Q=11:
BPB stands for
- Basic parameter block
- Bios precise block
- Basic precise block
- Bios parameter block

Q=12
Int 13-bios disk service "generally uses which register to return the error flag?

- CF
- DL
- **AH**
- AL

Q=13:
The first sector on the hard disk contains the
- Hard disk size

Partition table

- Data size
- Sector size

Q=14
Operating system organize data in the form of
- Folder
- Batch file
- File
- None of above

……

Q=15
In 9 pin db 9 connector, which pin is assigned to TD(transmitted data)

- 1
- 2

3

- 4

Q=16”
Device derive can be divided into ----------major categories.

- 5
- 4
- 3

2

==========

Set-09

1. BL contains 5 decimal then after right shift , BL will become

- 3
- 2.5
- 5
- 10

2. 8 * 16 font is stored in _____ bytes.

- 3
- 4
- 8

16

3. In DOS input buffer , number of characters actually read on return is stored in

- First byte

Second byte

- Third byte
- Fourth byte

4. IRQ 0 has priority

- Low
- High

Highest

- Medium

5. Thread registration code initialize PCB and add to linked list so that _____ will give it turn.

- Assembler
- Linker

Scheduler

- Debugger

6. Traditional calling conventions are in _____ number

- 1

2

- 3
- 4

7. VESA VEB 2.0 is standard for

High Resolution Mode

- Low Resolution Mode
- Very High Resolution Mode
- Medium Resolution Mode

8. To clear direction flag which instruction is used

Cld

- Clrd
- Cl df
- Clr df

9. In STOSW instruction , When DI is cleared , SI is

- Incremented by 1

Incremented by 2

- Decremented by 1
- Decremented by 2

10. Interrupt that is used in debugging with help of trap flag is

- INT 0

INT 1

- INT 2
- INT 3

11. INT for arithmetic overflow is

- INT 1
- INT 2
- INT 3

INT 4

12. IRQ referred as

- ***Eight Input signals one output signal***
- One Input signal
- Eight Output signals
- One output signal

13. IRQ for keyboard is ____***1***_____

14. IRQ for sound card is _____***5***_____

15. IRQ for floppy disk is _____***6***_____

16. IRQ with highest priority is
- Keyboard IRQ

Timer IRQ

- Sound Card
- Floppy Disk

17. Pin for parallel port ground is
- 10-18

18-25

- 25-32
- 32-39

18. The physical address of Interrupt Descriptor Table (IDT) is stored in
- GDTR

IDTR

- IVT
- IDTT

19. Execution of "RET 2" results in?

20. CX register is

Count register

- Data register
- Index register
- Base register

21. OUT instruction uses **__AX____** as source register.

22. IN DB-9 connector the Data Set ready pin is at
- 5

6

- 7
- 8

23. If two devices uses same IRQ then there is
- IRQ collision

IRQ conflict

- IRQ drop

24. VESA organizes 16 bit color for every pixel in ratio
- 5:5:5

5:6:5

- 6:5:6
- 5:6:7

25. Division by zero is done by which interrupt.

Interrupt 0.

……

Question No: 1 (Marks: 1) - Please choose one

After the execution of SAR instruction

- **The msb is replaced by a 0**
- The msb is replaced by 1
- The msb retains its original value
- The msb is replaced by the value of CF

Question No: 2 (Marks: 1) - Please choose one

RETF will pop the offset in the

- BP
- **IP**
- SP
- SI

Question No: 3 (Marks: 1) - Please choose one

The routine that executes in response to an INT instruction is called

- **ISR**
- IRS
- ISP
- IRT

Question No: 4 (Marks: 1) - Please choose one

The first instruction of "COM" file must be at offset:

- 0x0010
- **0x0100**
- 0x1000
- 0x0000

Question No: 5 (Marks: 1) - Please choose one

"Far" jump is not position relative but is _____

- memory dependent
- **Absolute**
- temporary
- indirect

Question No: 6 (Marks: 1) - Please choose one

Only _____ instructions allow moving data from memory to memory.

- **string**
- word
- indirect
- stack

Question No: 7 (Marks: 1) - Please choose one

_____ After the execution of instruction "RET 2"

- **SP is incremented by 2**
- SP is decremented by 2
- SP is incremented by 4
- SP is decremented by 4

Question No: 8 (Marks: 1) - Please choose one

_____ DIV instruction has

- **Two forms**
- Three forms
- Four forms
- Five forms

Question No: 9 (Marks: 1) - Please choose one

_____ When the operand of DIV instruction is of 16 bits then implied dividend will be of

- 8 bits
- 16 bits
- **32 bits**
- 64 bits

Question No: 10 (Marks: 1) - Please choose one

_____ After the execution of MOVS instruction which of the following registers are updated

- SI only
- DI only
- **SI and DI only**
- SI, DI and BP only

Question No: 11 (Marks: 1) - Please choose one

_____ In 8088 architecture, whenever an element is pushed on the stack

- ► SP is decremented by 1
- ► **SP is decremented by 2**
- ► SP is decremented by 3
- ► SP is decremented by 4

Question No: 12 (Marks: 1) - Please choose one

_____ When a very large number is divided by very small number so that the quotient is larger than the space provided, this is called

- ► Divide logical error
- ► **Divide overflow error**
- ► Divide syntax error
- ► An illegal instruction

Question No: 13 (Marks: 1) - Please choose one

_____ In the word designated for one screen location, the higher address contains

- ► **The character code**
- ► The attribute byte
- ► The parameters
- ► The dimensions

Question No: 14 (Marks: 1) - Please choose one

_____ Which of the following options contain the set of instructions to open a window to the video memory?

- ► mov AX, 0xb008
  mov ES, AX
- ► **mov AX, 0xb800**
  mov ES, AX
- ► mov AX, 0x8b00
  mov ES, AX
- ► mov AX, 0x800b
  mov ES, AX

Question No: 15 (Marks: 1) - Please choose one

_____ In a video memory, each screen location corresponds to

- ► One byte
- ► **Two bytes**
- ► Four bytes
- ► Eight bytes

Question No: 16 (Marks: 1) - Please choose one

The execution of the instruction "mov word [ES : 0], 0x0741" will print character "A" on screen , background color of the screen will be

- **Black**
- White
- Red
- Blue

==========

Set-10

Question No: 1 ___(Marks: 1) - Please choose one
Which of the following is not true about registers?

1. Their operation is very much like memory
2. Intermediate results may also be stored in registers.
3. They are also called scratch pad ram
4. None of given options.

Question No: 2 ___(Marks: 1) - Please choose one
move [bp], al moves the one byte content of the AL register to the address contained in BP register in the current

1. Stack segment
2. Code segment
3. Data segment
4. Extra segment

Question No: 3 (Marks: 1) - Please choose one
In a rotate through carry right (RCR) instruction applied on a 16 bit word Effectively there is

1. 16 bits rotation
2. 1 bit rotation
3. 17 bits rotation
4. 8 bits rotation

Question No: 4__ (Marks: 1) - Please
choose one The 8088 stack works on
1. Word sized elements
2. Byte sized elements
3. Double sized element

4. Nible sized element

Question No: 5 (Marks: 1) - Please
choose one
An 8 x 16 font is stored in.....Bytes

1. 2
2. 4
3. 8
4. 16

Question No: 6 (Marks: 1) - Please

INT 10 is used for.....services.
1. RAM
2. Disk
3. BIOS video
4. DOS video

Question No: 7 __ (Marks: 1) - Please choose one
Priority of IRQ 0 interrupt is
1. medium
2. high
3. highest
4. low

Question No: 8 __ (Marks: 1) - Please choose one
Threads can have function calls, parameters and _____variables.
1. global
2. local
3. legal
4. illegal

Question No: 9 __ (Marks: 1) - Please choose
one How many prevalent calling conventions do.....exist

1. 1
2. 2
3. 3
4. 4

Question No: 10 (Marks: 1) - Please choose
one In 9pin DB 9 DSR is assigned on pin number
1. 4
2. 5
3. 6

4. 7

Question No: 11
(Marks: 1) - Please
choose one In 9pin DB 9 CTS is assigned on pin
number
1. 6
2. 7
3. 8
4. 9

Question No: 12__ (Marks: 1) - Please choose one
In 9pin DB 9 CD is assigned on pin number
1. 1
2. 2
3. 3
4. 4

Question No: 13__ (Marks: 1) - Please choose one

In 9pin DB 9 RD is assigned on pin number
- 1
- 2
- 3
- 4

Question No: 14 __ (Marks: 1) - Please choose one
in device attribute word which of the following bit decides whether it is a cha rater
1. device or a block device
2. Bit 12 Bit 13
3. Bit 14
4. Bit 15

Question No: 15__ (Marks: 1) - Please choose one
Video servioces are classified into _____broad categories
- 2
- 3
- 4
- 5

Question No: 16 (Marks: 1) - Please choose
one In STOSB instruction, when DF is clear, SI
is
1. Incremented by 1

2. Incremented by 2
3. Decremented by 1
4. Decremented by 2

Question No: 17 (Marks: 1) - Please choose one The
process of sending signals back and forth is called

1. Activity
2. Hand-shaking
3. Interruption
4. Time clicking

Question No: 18 (Marks: 1) - Please choose one
which of the following is a special type of interrupt that returns to the same instruction instead of the next instruction

1. Divide overflow interrupt
2. Debug interrupt
3. Arithmetic overflow interrupt
4. Change of sign interrupt

Question No: 19 ___(Marks: 1) - Please choose one
Which of the following IRQs is derived by a timer device?
1. IRQ 0
2. IRQ 1
3. IRQ 2
4. IRQ 3

Question No: 20 __ (Marks: 1) - Please choose one
Which of the following interrupts is used for Arithmetic overflow
1. INT 1
2. INT 2
3. INT 3
4. INT 4

Question No: 21 __ (Marks: 1) - Please choose one
Which of the following IRQs is connected to serial port COM 2?
1. IRQ 0
2. IRQ 1
3. IRQ 2
4. IRQ 3

Question No: 22 __ (Marks: 1) - Please
choose one
An End of Interrupt (EOI) signal is sent by

1. Handler
2. Processor
3. IRQ
4. PIC

Question No: 23 __ (Marks: 1) - Please choose one

The source registers in OUT is

1. AL or AX
2. BL or BX
3. CL or CX
4. DL or DX

Question No: 24 (Marks: 1) - Please choose one

In programmable interrupt controller which of the following ports is used for selectively enabling or disabling interrupts

1. 19
2. 20
3. 21
4. 22

Question No: 25 (Marks: 1) - Please choose one

The number of pins in a parallel port connector are?

1. 25
2. 30
3. 35

Question No: 26 (Marks: 1) - Please choose one

Which of the following pins of a parallel port connector are grounded?

1. 10-18
2. 18-25
3. 25-32
4. 32-39

Question No: 27 __ (Marks: 1) - Please choose one

Suppose a decimal number 35 when its binary is shifted to write two places the new number will become

1. 35
2. 70
3. 140
4. 17

Question No: 28 __ (Marks: 1) - Please choose one

A 32bit address register can access upto .....of memory so memory access has increased a lot.

1. 2GB
2. 4GB
3. 6GB
4. 8GB

Question No: 29 __ (Marks: 1) - Please choose one
In NASM an imported symbol is declared with the .....while and exported symbol is declared with the .....
1. Global directive, External directive
2. External directive, Global directive
3. Home Directive, Foreign Directive
4. Foreign Directive, Home Directive

Question No: 30 (Marks: 1) - Please choose
one Single step interrupt is
1. Hardware interrupt
2. Like divide by zero interrupt
3. Like divide by 1 interrupt
4. Software interrupt

Question No: 31 __ (Marks: 1)
Which services are gained bi INT 0x16
Solution:
Hardware interrupt
Like divide by zero interrupt
Like divide by 1 interrupt
Software interrupt

Question No: 32 (Marks: 1

Give the name of any one VESA servic
- Hardware interrupt
- Like divide by zero interrupt
- Like divide by 1 interrupt
- Software interrupt

==========

Set-11

Question No: 1 (Marks: 1)
- Please choose one
Sun SPARC Processor has a fixed _____ instruction size.
1. 16bit
2. 32bit
3. 64bit
4. 20bit

Question No: 2 (Marks: 1)
- Please choose one

When the subprogram finishes, the _____ retrieves the return address from the stack and transfers control to that location.
1. RET instruction
2. CALL instruction
3. POP instruction
4. Jump instruction

Question No: 3 (Marks: 1)
- Please choose one
A 32 bit address register can access upto _____ of memory.
- 1 GB
- 6 GB
- 4 GB
- 2 GB

Question No: 4 (Marks: 1)
- Please choose one
The value of a segment register when the processor is running under protected mode is called
1. segment descriptor
2. segment selector
3. global descriptor table
4. protected register

Question No: 5 (Marks: 1)
- Please choose one
FS and GS are two _____ in protected mode.
1. segment registers
2. segment selectors
3. stack pointers
4. register pointers

Question No: 6 (Marks: 1)
- Please choose one
IRQ 0 interrupt have _____ priority
1. low
2. medium
3. highest
4. lowest

Question No: 7 (Marks: 1)
- Please choose one
IDT stands for _____.
1. interrupt descriptor table
2. individual descriptor table
3. inline data table
4. interrupt descriptor table

Question No: 8 (Marks: 1)
- Please choose one
Every bit of line status in serial port conveys _____ information.
1. different
2. same
3. partial
4. full

Question No: 9 (Marks: 1)
- Please choose one
There are total _____ bytes in a standard floppy disk.
1. 1444k
2. 1440k
3. 1280k
4. 2480k

Question No: 10 (Marks: 1)
- Please choose one
An 8x16 font is stored in _____ bytes.
- 8
- 16
- 4
- 20

==========

. Serial Port is also accessible via ___***I/O***___ ports **,** ____**COM 1**___ is accessible via ports 3F8-3FF while ___***COM 2***___is accessible via 2F8 -2FF.

The first register at 3F8 is the __***Transmitter***__holding register if written to and the receiver __***buffer***__register if read from.

Other register of our interest include 3F9 whose ___***Bit 0***__must be set to enable received data available interrupt and __***Bit 1***___must be set to enable transmitter holding register empty interrupt.
(Transmitter, COM 1, I/O ports , COM2. bit 0 , Buffer , 3FA)

==========

Set-12

1. Assembly language is not a low level language.
a. True
b. False

2. In case of COM File first command parameter is stored at _____ offset of program segment prefix.
a. 0x80 (Not Confirm)
b. 0x82
c. 0x84
d. 0x86

3. Address always goes from
a. Processor to meory
b. Memory to processor
c. Memory to memory
d. None of the above

4. The sourse register in OUT is
a. AL or AX
b. BL or BX
c. CL or CX
d. DL or DX

5. By default CS is associated with
a. SS
b. BP
c. CX
d. IP

6. Which of the following pins of parallel port are grounded
a. 10-18
b. 18-25
c. 25-32
d. 32-39

7. In the instruction mov word [es:160], 0x1230, 30 represents the character
a. A
b. B
c. 0
d. 1

8. On executing 0x21 0x3D, if file cant be opened then
a. CF will contain 1
b. CF will contain 0
c. ZF will contain 1
d. ZF will contain 0

9. Which of the following IRQ is cascading interrupt
a. IRQ 0
b. IRQ 1
c. IRQ 2
d. IRQ 3

10. The execution of instruction mov word [es:160], 0x1230, will print a character on the screen at
a. First column of second row
b. Second column of first row
c. Second column of second row
d. First column of third row

==========

1)))SHR and SAL are same?
.True (correct)

.False
2)))mov ax,0 will set ZF flag
.True
.False
3)))In 9 pin DB connector ,which pic is assigned to TD.
. 1
. 2
. 3(correct)
. 4
4)))Lower 16 bits of EAX are labeled as
. AX(correct)
. BX
.EAX
.none of above
5))) which is the special prefix used for repeating a block
.rep(correct)
.repeat
.repb
.repe
6)) JA can not after cmp if unsigned destinition is greater than source
.true
.false

Q=1
Conditional jump can only:

1. Far
2. short
3. near
4. all of the given

q=2:
Address is always go from:
1. Processor to memory
2. Memory to processor
3. Memory to memory
4. None of given

Q=3;
Programmable interrupt controllers have two ports 20 and 21……port 20 is a control port while port 21 is ……..
1. The interrupt make register
2. Interrupt port
3. Output port
4. Input port

Q=4:

In the instruction “move word[es:160],0x1230 represent the charechter……..
1. A
2. B
3. 0

4. 1

Q=5:
The 8088 processor divides interrupts into how many classes?
1. 2
2. 3
3. 4
4. 5

Q=6:
Which of the following is the pair of register used to access memory in string instruction?
1. DI and BP
2. SI and BP
3. DI and SI
4. DS and SI

Q=7:
In case of COM file,first command line parameter is stored at .....offset of program segment prefix'
1. 0x80
2. 0x82
3. 0x84
4. 0x86

Q=8:
The INT 0x13 service 0x03 is use to ...
1. Read disk sector
2. Write disk sector
3. Reset disk sector
4. Get drive parameters

Q=9:
After the execution of STOSWB,the CX wil be.....
1. Incremented by 1
2. Incremented by 2
3. Decremented by 1
4. Decremented by 2

Q=10
The execution of the instruction "mov word [ES:160],0x1230"will print a character on the screen at:
1. First column of second row
2. Second column of first row
3. Second column of second row
4. First column of third row

==========

Set-13

Question # 1
There are three busses to communicate the processor and memory named as
_____
1) : address bus.,data bus and data bus.

2) : addressing bus.,data bus and data bus.
3) : address bus.,datamove bus and data bus.
4) : address bus.,data bus and control bus..
Correct Option : 4 From : Lecture 1

Question # 2
The address bus is unidirectional and address always travels from processor to memory.
1) : TRUE
2) : FALSE
3) :
4) :
Correct Option : 1 From : Lecture 1

Question # 3
Data bus is bidirectional because_____
1) : To way
2) : Data moves from both, processor to memory and memory to processor,
3) : Data moves from both, processor to memory and memory to data Bus,
4) : None of the Given
Correct Option : 3 From : Lecture 1

Question # 4
Control bus_____
1) : is Not Important.
2) : is Important .
3) : bidirectional.
4) : unidirectional .
Correct Option : 3 From : Lecture 1

Question # 5
A memory cell is an n-bit location to store data, normally _____also called a byte
1) : 4-bit
2) : 8-bit
3) : 6-bit
4) : 80-bit
Correct Option : 2 From : Lecture 1

Question # 6
The number of bits in a cell is called the cell width._____ define the memory completely.
1) : Cell width and number of cells,
2) : cell number and width of the cells,
3) : width
4) : Height
Correct Option : 1 From : Lecture 1

Question # 7
for memory we define two dimensions. The first dimension defines how many _____bits are there in a single memory cell.
1) : parallel
2) : Vertical
3) : long
4) : short

Correct Option : 1 From : Lecture 1

Question # 8
_____ operation requires the same size of data bus and memory cell width.
1) : Normal
2) : Best and simplest
3) : first
4) : None of the Given
Correct Option : 2 From : Lecture 1

Question # 9
Control bus is only the mechanism. The responsibility of sending the appropriate signals on the control bus to the memory is of the_____.
1) : Data Bus
2) : processor
3) : Address Bus
4) : None of the Given
Correct Option : 2 From : Lecture 1

Question # 10
In “total: dw 0 ” Opcode total is a _____
1) : Literal
2) : Variable
3) : Label
4) : Starting point
Correct Option : 3 From : Lecture 10

Question # 11
| 0 |--›| 1 | 1 | 0 | 1 | 0 | 0 | 0 | --›| C | is a example of _____
1) : Shl
2) : sar
3) : Shr
4) : Sal
Correct Option : 3 From : Lecture 10

Question # 12
| C |‹--| 1 | 1 | 0 | 1 | 0 | 0 | 0 | ‹--| 0 | is a example of _____
1) : Shl
2) : sar
3) : Shr
4) : Sal
Correct Option : 1 From : Lecture 10

Question # 13
ADC has _____ operands.
1) : two
2) : three
3) : Five
4) : Zero
Correct Option : 2 From : Lecture 10

Question # 14
The basic purpose of a computer is to perform operations, and operations need _____.

1) : order
2) : nothing
3) : operands
4) : bit
Correct Option : 3 From : Lecture 2

Question # 15
Registers are like a scratch pad ram inside the processor and their operation is very much like normal_____.
1) : Number
2) : opreations
3) : memory cells
4) : None of the Given
Correct Option : 3 From : Lecture 2

Question # 16
There is a central register in every processor called the _____ and The word size of a processor is defined by the width of its_____.
1) : accumulator,accumulator
2) : data bus,accumulator
3) : accumulator, Address Bus
4) : accumulator,memory
Correct Option : 1 From : Lecture 2

Question # 17
_____does not hold data but holds the address of data
1) : Pointer, Segment, or Base Register
2) : Pointer, Index, or Base Register
3) : General Registers
4) : Instruction Pointer
Correct Option : 2 From : Lecture 2

Question # 18
"The program counter holds the address of the next instruction to be _____"
1) : executed.
2) : called
3) : deleted
4) : copy
Correct Option : 1 From : Lecture 2

Question # 19
There are _____ types of "instruction groups"
1) : 4
2) : 5
3) : 3
4) : 2
Correct Option : 1 From : Lecture 2

Question # 20
These instructions are used to move data from one place to another.
1) : TRUE
2) : FALSE
3) :
4) :

Correct Option : 1 From : Lecture 2

Question # 21
"mov" instruction is related to the _____ *****.
1) : Arithmetic and Logic Instructions
2) : Data Movement Instructions
3) : Program Control Instructions
4) : Special Instructions
Correct Option : 2 From : Lecture 2

Question # 22
_____allow changing specific processor behaviors and are used to play with it.
1) : Special Instructions
2) : Data Movement Instructions
3) : Program Control Instructions
4) : Arithmetic and Logic Instructions
Correct Option : 1 From : Lecture 2

Question # 23
8088 is a 16bit processor with its accumulator and all registers of _____.
1) : 32 bits
2) : 6 bits
3) : 16 bits
4) : 64 bits
Correct Option : 3 From : Lecture 2

Question # 24
The _____ of a processor means the organization and functionalities of the registers it contains and the instructions that are valid on the processor.
1) : Manufactures
2) : architecture
3) : Deal
4) : None of the Given
Correct Option : 2 From : Lecture 2

Question # 25
Intel IAPX88 Architecture is _____
1) : More then 25 old
2) : New
3) : Not Good
4) : None of the Given
Correct Option : 1 From : Lecture 2

Question # 26
The iAPX88 architecture consists of_____registers.
1) : 13
2) : 12
3) : 9
4) : 14
Correct Option : 4 From : Lecture 3

Question # 27
General Registers are _____
1) : AX, BX, CX, and DX

2) : XA, BX, CX, and DX
3) : SS,SI and DI
4) : 3
Correct Option : 1 From : Lecture 3

Question # 28
AX means we are referring to the extended 16bit "A" register. Its upper and lower byte are separately accessible as _____.
1) : AH and AL
2) : A Lower and A Upper
3) : AL, AU
4) : AX
Correct Option : 1 From : Lecture 3

Question # 29
AX is General purpose Register where A stands for_____.
1) : Acadmic
2) : Ado
3) : Architecture
4) : Accumulator
Correct Option : 4 From : Lecture 3

Question # 30
The B of BX stands for _____because of its role in memory addressing.
1) : Busy
2) : Base
3) : Better
4) : None of the Given
Correct Option : 2 From : Lecture 3

Question # 31
The D of DX stands for Destination as it acts as the destination in _____.
1) : I/O operations
2) : operations
3) : memory cells
4) : Memory I/O operations
Correct Option : 1 From : Lecture 3

Question # 32
The C of CX stands for Counter as there are certain instructions that work with an automatic count in the _____.
1) : DI register
2) : BX register
3) : CX register
4) : DX register
Correct Option : 3 From : Lecture 3

Question # 33
_____are the index registers of the Intel architecture which hold address of data and used in memory access.
1) : SI and SS
2) : PI and DI
3) : SI and IP

4) : SI and DI
Correct Option : 4 From : Lecture 3

Question # 34
In Intel IAPX88 architecture _____ is the special register containing the address of the next instruction to be executed.
1) : AX
2) : PI
3) : IP
4) : SI
Correct Option : 3 From : Lecture 3

Question # 35
SP is a memory pointer and is used indirectly by a set of _____.
1) : instructions
2) : Pointers
3) : Indexes
4) : Variables
Correct Option : 1 From : Lecture 3

Question # 36
_____is also a memory pointer containing the address in a special area of memory called the stack.
1) : SP
2) : BP
3) : PB
4) : AC
Correct Option : 2 From : Lecture 3

Question # 37
_____is bit wise significant and accordingly each bit is named separately.
1) : AX
2) : FS
3) : IP
4) : Flags Register
Correct Option : 4 From : Lecture 3

Question # 38
When two 16bit numbers are added the answer can be 17 bits long, this extra bit that won't fit in the target register is placed in the _____where it can be used and tested
1) : carry flag
2) : Parity Flag
3) : Auxiliary Carry
4) : Zero Flag
Correct Option : 1 From : Lecture 3

Question # 39
Program is an ordered set of instructions for the processor.
1) : TRUE
2) : FALSE
3) :
4) :
Correct Option : 1 From : Lecture 3

Question # 40
For Intel Architecture “operation destination, source” is way of writing things.
1) : TRUE
2) : FALSE
3) :
4) :
Correct Option : 1 From : Lecture 3

Question # 41
Operation code “ add ax, bx ” _____.
1) : Add the bx to ax and change the bx
2) : Add the ax to bx and change the ax
3) : Add the bx to ax and change the ax
4) : Add the bx to ax and change nothing
Correct Option : 3 From : Lecture 3

Question # 42
The maximum memory iAPX88 can access is_____.
1) : 1MB
2) : 2MB
3) : 3MB
4) : 128MB
Correct Option : 1 From : Lecture 4

Question # 43
The maximum memory iAPX88 can access is 1MB which can be accessed with _____.
1) : 18 bits
2) : 20 bits
3) : 16 bits
4) : 2 bits
Correct Option : 2 From : Lecture 4

Question # 44
_____address of 1DED0 where the opcode B80500 is placed.
1) : physical memory
2) : memory
3) : efective
4) : None of the Given
Correct Option : 1 From : Lecture 4

Question # 45
16 bit of Segment and Offset Addresses can be converted to 20bit Address i.e Segment Address with lower four bits zero + Offset Address with _____ four bits zero = 20bit Physical Address
1) : Middle
2) : lower
3) : Top
4) : upper
Correct Option : 4 From : Lecture 4

Question # 46
When adding two 20bit Addresses a carry if generated is dropped without being stored

anywhere and the phenomenon is called address_____.
1) : wraparound
2) : mode
3) : ping
4) : error
Correct Option : 1 From : Lecture 4

Question # 47
segments can only be defined a 16byte boundaries called _____ boundaries.
1) : segment
2) : paragraph
3) : Cell
4) : RAM
Correct Option : 1 From : Lecture 4

Question # 48
in a Program CS, DS, SS, and ES all had the same value in them. This is called _____.
1) : equel memory
2) : overlapping segments
3) : segments hidding
4) : overlapping SI
Correct Option : 2 From : Lecture 4

Question # 49
"db num1" size of the memory is _____
1) : 1byte
2) : 4bit
3) : 16bit
4) : 2byte
Correct Option : 1 From : Lecture 5

Question # 50
" 1----------[org 0x0100]
2----------mov ax, [num1] ; load first number in ax
3----------mov bx, [num2] ; load second number in bx
4----------add ax, bx _____
5----------int 0x21
6----------
7----------num1: dw 5
8----------num2: dw 10

Comments for the 4 are :
1) : No comments Will be
2) : ; accumulate sum in add
3) : ; accumulate sum in ax
4) : ; accumulate sum in Bx
Correct Option : 3 From : Lecture 5

Question # 51
In " mov ax, bx " is _____ Addressing Modes.
1) : Immediate
2) : Indirect

3) : Direct
4) : Register
Correct Option : 4 From : Lecture 5

Question # 52
In “mov ax, [bx] ” is _____ Addressing Modes
1) : Based Register Indirect
2) : Indirect
3) : Base Indirect
4) : Immediate
Correct Option : 1 From : Lecture 5

Question # 53
In “mov ax, 5 ” is _____ Addressing Modes
1) : Immediate
2) : Indirect
3) : Indirect
4) : Register
Correct Option : 1 From : Lecture 6

Question # 54
In “ mov ax, [num1+bx] ” is _____ ADDRESSING
1) : OFFSET+ Indirect
2) : Register + Direct
3) : Indirect + Reference
4) : BASEd REGISTER + OFFSET
Correct Option : 4 From : Lecture 7

Question # 55
“base + offset addressing ” gives This number which came as the result of addition is called the _____.
1) : Address
2) : mode
3) : effective address
4) : Physical Address
Correct Option : 3 From : Lecture 7

Question # 56
“mov ax, [cs:bx]” associates _____ for this one instruction
1) : CS with BX
2) : BX with CS
3) : BX with AX
4) : None of the Given
Correct Option : 2 From : Lecture 7

Question # 57
For example
BX=0100
DS=FFF0
And Opcode are;
move [bx+0x0100], Ax
now what is the effective memory address;
1) : 0020
2) : 0200

3) : 0300
4) : 0x02
Correct Option : 2 From : Lecture 7

Question # 58
For example
BX=0100
DS=FFF0
And Opcode are;
move [bx+0x0100], Ax
now what is the physical memory address;
1) : 0020
2) : 0x0100
3) : 0x10100
4) : 0x100100
Correct Option : 2 From : Lecture 7

Question # 59
In " mov [1234], al " is _____ Addressing Modes.
1) : Immediate
2) : Indirect
3) : Direct
4) : Register
Correct Option : 3 From : Lecture 8

Question # 60
In " mov [SI], AX " is _____ Addressing Modes.
1) : Basef Register Indirect
2) : Indirect
3) : Indexed Register Indirect
4) : Immediate
Correct Option : 3 From : Lecture 8

Question # 61
In " mov ax, [bx - Si] " is _____ ADDRESSING
1) : Basef Register Indirect
2) : Indirect
3) : Direct
4) : illegal
Correct Option : 4 From : Lecture 8

Question # 62
In " mov ax, [BL] " there is error i.e. _____
1) : Address must be 16bit
2) : Address must be 8bit
3) : Address must be 4bit
4) : 8 bit to 16 bit move illegal
Correct Option : 4 From : Lecture 8

Question # 63
In " mov ax, [SI+DI] " there is error i.e. _____
1) : Two indexes can't use as Memory Address
2) : index can't use as Memory Address
3) : I don't Know

4) : None of the Given
Correct Option : 1 From : Lecture 8

Question # 64
In JNE and JNZ there is difference for only _____;
1) : Programmer or Logic
2) : Assembler
3) : Debugger
4) : IAPX88
Correct Option : 1 From : Lecture 9

Question # 65
JMP is Instruction that on executing take jump regardless of the state of all flags is called_____
1) : Jump
2) : Conditional jump
3) : Unconditional jump
4) : Stay
Correct Option : 3 From : Lecture 9

Question # 66
When result of the source subtraction from the destination is zero, zero flag is set i.e. ZF=1
its mean that;
1) : DEST = SRC
2) : DEST != SRC
3) : DEST < SRC
4) : DEST > SRC
Correct Option : 1 From : Lecture 9

Question # 67
When an unsigned source is subtracted from an unsigned destination and the destination is smaller, borrow is needed which sets the _____.
1) : carry flag i.e CF = 0
2) : carry flag i.e CF = 1
3) : Carry Flag + ZF=1
4) : None of the Given
Correct Option : 2 From : Lecture 9

Question # 68
In the case of unassigned source and destination when subtracting and in the result ZF =1 OR CR=1 then _____
1) : DEST = SRC
2) : DEST != SRC
3) : UDEST ? USRC
4) : DEST > SRC
Correct Option : 3 From : Lecture 9

Question # 69
In the case of unassigned source and destination when subtracting and in the result ZF =0 AND CR=0 then _____
1) : DEST = SRC
2) : DEST != SRC
3) : UDEST < USRC

4) : UDEST > USRC
Correct Option : 4 From : Lecture 9

Question # 70
In the case of unassigned source and destination when subtracting and in the result CR=0 then _____
1) : DEST = SRC
2) : DEST != SRC
3) : UDEST < USRC
4) : UDEST ? USRC
Correct Option : 4 From : Lecture 9

Question # 71
_____This jump is taken if the last arithmetic operation produced a zero in its destination. After a CMP it is taken if both operands were equal.
1) : Jump if zero(JZ)/Jump if equal(JE)
2) : Jump if equal(JE)
3) : Jump if zero(JZ)
4) : No Jump fot This
Correct Option : 1 From : Lecture 9

Question # 72
_____This jump is taken after a CMP if the unsigned source is smaller than or equal to the unsigned destination.
1) : JBE(Jump if not below or equal)
2) : JNA(Jump if not above)/JBE(Jump if not below or equal)
3) : JNA(Jump if not above)
4) : No Jump fot This
Correct Option : 2 From : Lecture 9
Question # 1
Numbers of any size can be added using a proper combination of _____.
1) : ADD and ADC
2) : ABD and ADC
3) : ADC and ADC
4) : None of the Given
Correct Option : 1 From : Lecture 11

Question # 2
Like addition with carry there is an instruction to subtract with borrows called_____.
1) : SwB
2) : SBB
3) : SBC
4) : SBBC
Correct Option : 2 From : Lecture 11

Question # 3
if “and ax, bx” instruction is given, There are _____ operations as a result
1) : 16 AND
2) : 17 AND
3) : 32 AND
4) : 8 AND
Correct Option : 1 From : Lecture 12

Question # 4
_____can be used to check whether particular bits of a number are set or not.
1) : AND
2) : OR
3) : XOR
4) : NOT
Correct Option : 1 From : Lecture 12

Question # 5
_____can also be used as a masking operation to invert selective bits.
1) : AND
2) : OR
3) : XOR
4) : NOT
Correct Option : 3 From : Lecture 12

Question # 6
Masking Operations are Selective Bit _____
1) : Clearing, XOR, Inversion and Testing
2) : Clearing, Setting, Inversion and Testing
3) : Clearing, XOR, AND and Testing
4) : None of the Given
Correct Option : 2 From : Lecture 12

Question # 7
The _____ instruction allows temporary diversion and therefore reusability of code.
1) : CALL
2) : RET
3) : AND
4) : XOR
Correct Option : 1 From : Lecture 13

Question # 8
CALL takes a label as _____ and execution starts from that label,
1) : argument
2) : Lable
3) : TXt
4) : Register
Correct Option : 1 From : Lecture 13

Question # 9
When the _____instruction is encountered and it takes execution back to the instruction following the CALL.
1) : CALL
2) : RET
3) : AND
4) : XOR
Correct Option : 2 From : Lecture 13

Question # 10
_____ Both the instructions are commonly used as a pair, however technically they are independent in their operation.
1) : RET and ADC

2) : Cal and SSb
3) : CALL and RET
4) : ADC and SSB
Correct Option : 3 From : Lecture 13

Question # 11
The CALL mechanism breaks the thread of execution and does not change registers, except _____.
1) : SI
2) : IP
3) : DI
4) : SP
Correct Option : 2 From : Lecture 13

Question # 12
Stack is a _____ that behaves in a first in last out manner.
1) : Program
2) : data structure
3) : Heap
4) : None of the Given
Correct Option : 2 From : Lecture 14

Question # 13
If _____ is not available, stack clearing by the callee is a complicated process.
1) : CALL
2) : SBB
3) : RET n
4) : None of the Given
Correct Option : 3 From : Lecture 14

Question # 14
When the stack will eventually become full, SP will reach 0, and thereafter wraparound producing unexpected results. This is called stack _____
1) : Overflow
2) : Leakage
3) : Error
4) : Pointer
Correct Option : 1 From : Lecture 14

Question # 15
The pop operation makes a copy from the top of the stack into its_____.
1) : Register
2) : operand
3) : RET n
4) : Pointer
Correct Option : 2 From : Lecture 14

Question # 16
_____decrements SP (the stack pointer) by two and then transfers a word from the source operand to the top of stack
1) : PUSH
2) : POP
3) : CALL
4) : RET

Correct Option : 1 From : Lecture 14

Question # 17
POP transfers the word at the current top of stack (pointed to by SP) to the destination operand and then _____ SP by two to point to the new top of stack.
1) : increments
2) : dcrements
3) : ++
4) : --
Correct Option : 1 From : Lecture 14

Question # 18
The trick is to use the _____and _____operations and save the callers' value on the stack and recover it from there on return.
1) : POP, ADC
2) : CALL, RET
3) : CALL, RET n
4) : PUSH, POP
Correct Option : 4 From : Lecture 14

Question # 19
To access the arguments from the stack, the immediate idea that strikes is to _____ them off the stack.
1) : PUSH
2) : POP
3) : CALL
4) : Rrgister
Correct Option : 2 From : Lecture 15

Question # 20
push bp
we are _____
1) : sending bp copy to stack
2) : making bp copy from stack
3) : pushing bp on the stack
4) : doing nothing
Correct Option : 3 From : Lecture 15

Question # 21
Local Variables means variables that are used within the _____
1) : Subroutine
2) : Program
3) : CALL
4) : Label
Correct Option : 1 From : Lecture 15

Question # 22
Standard ASCII has 128 characters with assigned numbers from _____.
1) : 1to 129
2) : 0 to 127
3) : 0 to 128
4) : None of the Given
Correct Option : 2 From : Lecture 16

Question # 23
When _____ is sent to the VGA card, it will turn pixels on and off in such a way that a visual representation of 'A' appears on the screen.
1) : 0x60
2) : 0x90
3) : 0x30
4) : 0x40
Correct Option : 4 From : Lecture 16

Question # 24
Which bit is refer to the Blinking of foreground character
1) : 6
2) : 7
3) : 5
4) : 3
Correct Option : 2 From : Lecture 16

Question # 25
Which bit is refer to the Intensity component of foreground color
1) : 4
2) : 5
3) : 3
4) : 7
Correct Option : 3 From : Lecture 16

Question # 26
Which bit is refer to the Green component of background color
1) : 1
2) : 5
3) : 3
4) : 7
Correct Option : 2 From : Lecture 16

Question # 27
Which bit is refer to the Green component of foreground color
1) : 1
2) : 5
3) : 3
4) : 7
Correct Option : 1 From : Lecture 16

Question # 28
String can be indicate bye given
1) : db 0x61, 0x61, 0x63
2) : db 'a', 'b', 'c'
3) : db 'abc'
4) : All of the above
Correct Option : 4 From : Lecture 16

Question # 29
The first form divides a 32bit number in DX:AX by its 16bit operand and stores the _____ quotient in AX
1) : 16bit
2) : 17bit

3) : 32bit
4) : 64bit
Correct Option : 1 From : Lecture 17

Question # 30
The _____ (division) used in the process is integer division and not floating point division.
1) : DIV instruction
2) : ADC instruction
3) : SSB instruction
4) : DIVI instruction
Correct Option : 1 From : Lecture 17

Question # 31
_____(multiply) performs an unsigned multiplication of the source operand and the accumulator.
1) : Multi
2) : DIV
3) : MUL
4) : Move
Correct Option : 3 From : Lecture 18

Question # 32
The desired location on the screen can be calculated with the following formulae.
1) : location = (hypos * 80 + SP) * 3
2) : location = (hypos * 80 + slocation) * 2
3) : location = (hypos * 80 + epos) * 2
4) : None of the Given
Correct Option : 3 From : Lecture 18

Question # 33
To play with string there are 5 instructions that are _____
1) : STOS, LODS, CMPS, SCAS, and MOVS
2) : MUL, DIV, ADD, ADC and MOVE
3) : SSB, ADD, CMPS, ADC, and MOVS
4) : None of the Given
Correct Option : 1 From : Lecture 18

Question # 34
_____transfers a byte or word from register AL or AX to the string element addressed by ES:DI and updates DI to point to the next location.
1) : LODS
2) : STOS
3) : SCAS
4) : MOVE
Correct Option : 2 From : Lecture 18

Question # 35
_____ transfers a byte or word from the source location DS:SI to AL or AX and updates SI to point to the next location.
1) : LODS
2) : STOS
3) : SCAS
4) : MOVE

Correct Option : 1 From : Lecture 18

Question # 36
_____compares a source byte or word in register AL or AX with the destination string element addressed by ES: DI and updates the flags.
1) : LODS
2) : STOS
3) : SCAS
4) : MOVE
Correct Option : 3 From : Lecture 18

Question # 37
_____ repeat the following string instruction while the zero flag is set and REPNE or REPNZ repeat the following instruction while the zero flag is not set.
1) : REP or REPZ
2) : REPE or REPZ
3) : REPE or RPZ
4) : RPE or REPZ
Correct Option : 2 From : Lecture 18

Question # 38
LES loads _____
1) : ES
2) : DS
3) : PS
4) : LS
Correct Option : 1 From : Lecture 20

Question # 39
LDS loads_____.
1) : ES
2) : DS
3) : PS
4) : LS
Correct Option : 2 From : Lecture 20

Question # 40
REP allows the instruction to be repeated _____ times allowing blocks of memory to be copied.
1) : DX
2) : CX
3) : BX
4) : AX
Correct Option : 2 From : Lecture 20

Question # 41
_____pops IP, then CS, and then FLAGS.
1) : Ret n
2) : REZA
3) : REPE
4) : IRET
Correct Option : 4 From : Lecture 21

Question # 42

_____ , Trap, Single step Interrupt
1) : INT 0
2) : INT 1
3) : INT 3
4) : INT 0
Correct Option : 2 From : Lecture 21

Question # 43
_____,NMI-Non Maskable Interrupt
1) : INT 0
2) : INT 1
3) : INT 3
4) : INT 0
Correct Option : 3 From : Lecture 21

Question # 44
To hook an interrupt we change the _____ corresponding to that interrupt.
1) : SX
2) : vector
3) : AX
4) : BX
Correct Option : 2 From : Lecture 22
Question # 1
_____pops IP, then CS, and then FLAGS.
1) : Ret n
2) : REZA
3) : REPE
4) : IRET
Correct Option : 4 From : Lecture 21

Question # 2
_____ , Trap, Single step Interrupt
1) : INT 0
2) : INT 1
3) : INT 3
4) : INT 0
Correct Option : 2 From : Lecture 21

Question # 3
_____,NMI-Non Maskable Interrupt
1) : INT 0
2) : INT 1
3) : INT 3
4) : INT 0
Correct Option : 3 From : Lecture 21

Question # 4
To hook an interrupt we change the _____ corresponding to that interrupt.
1) : SX
2) : vector
3) : AX
4) : BX

==========

Set-14

Question No: 1 (Marks: 1) - Please choose one
The physical address of the stack is obtained by
- ► SS:SI combination
- ► SS:SP combination
- ► ES:BP combination
- ► ES:SP combination

Question No: 2 (Marks: 1) - Please choose one
Value of AH in the write Graphics pixel service is
- ► 0Ch
- ► 0Bh
- ► 1Ch
- ► 2Ch

Question No: 3 (Marks: 1) - Please choose one
Threads can have function calls, parameters and _____ variables.
- ► global
- ► local
- ► legal
- ► illegal

Question No: 4 (Marks: 1) - Please choose one
Creation of threads can be
- ► static
- ► dynamic
- ► easy
- ► difficult

Question No: 5 (Marks: 1) - Please choose one
How many prevalent calling conventions do exist
- ► 1
- ► 2
- ► 3
- ► 4

Question No: 6 (Marks: 1) - Please choose one
VESA VBE 2.0 is a standard for
- ► High resolution Mode
- ► Low resolution Mode
- ► Medium resolution Mode
- ► Very High resolution Mode

Question No: 7 (Marks: 1) - Please choose one
The serial port connection is a ---------- connector
- ► 9pin DB 9
- ► 8pin DB 9
- ► 3pin DB 9
- ► 9pin DB 5

Question No: 8 (Marks: 1) - Please choose one
Which of the following gives the more logical view of the storage medium
- ► BIOS
- ► DOS
- ► Both
- ► None

Question No: 9 (Marks: 1) - Please choose one
In STOSB instruction, when DF is clear, SI is

- ► Incremented by 1
- ► Incremented by 2
- ► Decremented by 1
- ► Decremented by 2

Question No: 10 (Marks: 1) - Please choose one
After the execution of STOSW the CX will be

- ► Decremented by 1
- ► Decremented by 2
- ► Incremented by 1
- ► Incremented by 2

Question No: 11 (Marks: 1) - Please choose one
IRQ is referred to

- ► Eight input signals
- ► One output signal
- ► One input signals
- ► Eight output signals

Question No: 12 (Marks: 1) - Please choose one
Which of the following IRQs is derived by a key board?
- ► IRQ 0
- ► IRQ 1
- ► IRQ 2
- ► IRQ 3

Question No: 13 (Marks: 1) - Please choose one
Which of the following IRQs is connected to serial port COM 1?
- ► IRQ 4

- IRQ 5
- IRQ 6
- IRQ 7

Question No: 14 (Marks: 1) - Please choose one
The physical address of IDT(Interrupt Descriptor Table) is stored in _____

- GDTR
- IDTR
- IVT
- IDTT

Question No: 15 (Marks: 1) - Please choose one
Assembly language is:

- Low-level programming language
- High-level programming language
- Also known as machine language
- Not considered closer to the computer

Question No: 16 (Marks: 1) - Please choose one
The number of bits required to access 1MB of memory are

- 16 bits
- 32 bits
- Depends on the processor architecture
- 20 bits

Question No: 17 (Marks: 1) - Please choose one
In STOSB instruction, SI is decremented or incremented by

- 3
- 2
- 1
- 4

Question No: 18 (Marks: 1) - Please choose one
In programmable interrupt controller, which of the following ports is referred as a control port.

- 19
- 20
- 21
- 22

Question No: 19 (Marks: 1) - Please choose one
INT 21 service 01H is used to read character from standard input with echo. It returns the result in _____ register.

- AL
- BL
- CL
- BH

Question No: 20 (Marks: 1) - Please choose one
In device attribute word, which of the following bit decides whether it is a character device or a block device

- Bit 12
- Bit 13

- Bit 14
- Bit 15

Question No: 21 (Marks: 1) - Please choose one
In 9pin DB 9, which pin number is assigned to CTS (Clear To Send) ?
- 6
- 7
- 8
- 9

Question No: 22 (Marks: 1) - Please choose one
In 9pin DB 9, which pin number is assigned to RD (Received Data) ?
- 1
- 2
- 3
- 4

Question No: 23 (Marks: 1) - Please choose one
VESA(Video Electronics Standards Association) organizes 16 color bits for every pixel in
- 5:5:5 format
- 5:6:5 format
- 6:5:6 format
- 5:6:7 format

Question No: 24 (Marks: 1) - Please choose one
Motorola 68K processors have ..... 23bit general purpose registers.
- 4
- 8
- 16
- 32

Question No: 25 (Marks: 1) - Please choose one
Programmable Interrupt Controller (PIC) has

- One input signals and eight output signals
- One input signal and one output signal
- Eight input signals and one output signals
- Eight input signals and eight output signals

Question No: 26 (Marks: 1) - Please choose one
Video services are classified into..... broad categories.
- 5
- 4
- 3
- 2

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Set-15

Question No: 1 (Marks: 1) - Please choose one
When a 32 bit number is divided by a 16 bit number, the quotient is of
· 32 bits
· 16 bits
· 8 bits
· 4 bits
Question No: 2 (Marks: 1) - Please choose one
In the instruction MOV AX, 5 the number of operands are
· 1
· 2
· 3
· 4
Question No: 3 (Marks: 1) - Please choose one
3. In DOS input buffer , number of characters actually read on return is stored in
· First byte
· Second byte
· Third byte
· Fourth byte
Question No: 4 (Marks: 1) - Please choose one
7. VESA VEB 2.0 is standard for
· High Resolution Mode
· Low Resolution Mode
· Very High Resolution Mode
· Medium Resolution Mode
Question No: 5 (Marks: 1) - Please choose one
22. IN DB-9 connector the Data Set ready pin is at
· 5
· 6
· 7
· 8
Question No: 6 (Marks: 1) - Please choose one
Threads can have function calls, parameters and _____ variables.
· global
· local
· legal
· illegal
Question No: 7 (Marks: 1) - Please choose one
How many prevalent calling conventions do exist
· 1
· 2
· 3
· 4
Question No: 8 (Marks: 1) - Please choose one
In 9pin DB 9 DSR is assigned on pin number
· 4
· 5
· 6
· 7
Question No: 9 (Marks: 1) - Please choose one
In 9pin DB 9 CTS is assigned on pin number
· 6

· 7
· 8
· 9

Question No: 10 (Marks: 1) - Please choose one
In 9pin DB 9 CD is assigned on pin number
· 1
· 2
· 3
· 4

Question No: 11 (Marks: 1) - Please choose one
A 32bit address register can access upto .....of memory so memory access has increased a lot.
· 2GB
· 4GB
· 6GB
· 8GB

Question No: 12 (Marks: 1) - Please choose one
in device attribute word which of the following bit decides whether it is a charater device or a block device
· Bit 12
· Bit 13
· Bit 14
· Bit 15

Question No: 13 (Marks: 1) - Please choose one
9. Which of the following IRQ is cascading interrupt
· IRQ 0
· IRQ 1
· IRQ 2
· IRQ 3

Question No: 14 (Marks: 1) - Please choose one
Which of the following interrupts is used for Arithmetic overflow
· INT 1
· INT 2
· INT 3
· INT 4

Question No: 15 (Marks: 1) - Please choose one
An End of Interrupt (EOI) signal is sent by
· Handler
· Processor
· IRQ
· PIC

Question No: 16 (Marks: 1) - Please choose one
The number of pins in a parallel port connector are?
· 20
· 25
· 30
· 35

Question No: 17 (Marks: 1) - Please choose one
Which of the following pins of a parallel port connector are grounded?
· 10-18
· 18-25
· 25-32
· 32-39

Question No: 18 (Marks: 1) - Please choose one

A 32bit address register can access upto ..... of memory so memory access has increased a lot.
· 2GB
· 4GB
· 6GB
· 8GB
Question No: 19 (Marks: 1) - Please choose one
9 Pin Serial connector is called
· DB-7
· DB-9
· DB-25
· 9DB-5
Question No: 20 (Marks: 1) - Please choose one
In NASM an imported symbol is declared with the ..... while and exported symbol is declared with the .....
· Global directive, External directive
· External directive, Global directive
· Home Directive, Foreign Directive
· Foreign Directive, Home Directive

==========

Set-16

Question No: 1 (Marks: 1) - Please choose one
When a 32 bit number is divided by a 16 bit number, the quotient is of
$ 32 bits
$ 16 bits
$ 8 bits
$ 4 bits
Question No: 2 (Marks: 1) - Please choose one
In the instruction MOV AX, 5 the number of operands are
$ 1
$ 2
$ 3
$ 4
Question No: 3 (Marks: 1) - Please choose one
3. In DOS input buffer , number of characters actually read on return is stored in
$ First byte
$ Second byte
$ Third byte
$ Fourth byte
Question No: 4 (Marks: 1) - Please choose one
7. VESA VEB 2.0 is standard for
$ High Resolution Mode
$ Low Resolution Mode
$ Very High Resolution Mode
$ Medium Resolution Mode
Question No: 5 (Marks: 1) - Please choose one
22. IN DB-9 connector the Data Set ready pin is at
$ 5
$ 6
$ 7
$ 8

Question No: 6 (Marks: 1) - Please choose one
Threads can have function calls, parameters and _____ variables.
$ global
$ local
$ legal
$ illegal
Question No: 7 (Marks: 1) - Please choose one
How many prevalent calling conventions do exist
$ 1
$ 2
$ 3
$ 4
Question No: 8 (Marks: 1) - Please choose one
In 9pin DB 9 DSR is assigned on pin number
$ 4
$ 5
$ 6
$ 7
Question No: 9 (Marks: 1) - Please choose one
In 9pin DB 9 CTS is assigned on pin number
$ 6
$ 7
$ 8
$ 9
Question No: 10 (Marks: 1) - Please choose one
In 9pin DB 9 CD is assigned on pin number
$ 1
$ 2
$ 3
$ 4
Question No: 11 (Marks: 1) - Please choose one
A 32bit address register can access upto ...access has
increased a lot.
$$2GB
$$4GB
$$6GB
$$8GB
Question No: 12 (Marks: 1) - Please choose one
.of memory so memory
in device attribute word which of the following bit decides whether it is a charater
device or a block device
$ Bit 12
$ Bit 13
$ Bit 14
$ Bit 15
Question No: 13 (Marks: 1) - Please choose one
9. Which of the following IRQ is cascading interrupt
$ IRQ 0
$ IRQ 1
$ IRQ 2
$ IRQ 3
Question No: 14 (Marks: 1) - Please choose one
Which of the following interrupts is used for Arithmetic overflow
$ INT 1

$ INT 2
$ INT 3
$ INT 4
Question No: 15 (Marks: 1) - Please choose one
An End of Interrupt (EOI) signal is sent by
$ Handler
$ Processor
$ IRQ
$ PIC
Question No: 16 (Marks: 1) - Please choose one
The number of pins in a parallel port connector are?
$ 20
$ 25
$ 30
$ 35
Question No: 17 (Marks: 1) - Please choose one
Which of the following pins of a parallel port connector are grounded?
$ 10-18
$ 18-25
$ 25-32
$ 32-39
Question No: 18 (Marks: 1) - Please choose one
A 32bit address register can access upto ...
access has increased a lot.
$$2GB
$$4GB
$$6GB
$$8GB
Question No: 19 (Marks: 1) - Please choose one
9 Pin Serial connector is called
$ DB-7
$ DB-9
$ DB-25
$$9DB-5
Question No: 20 (Marks: 1) - Please choose one In
NASM an imported symbol is declared with the ...
exported symbol is declared with the ...
$ Global directive, External directive
$ External directive, Global directive
$ Home Directive, Foreign Directive
$ Foreign Directive, Home Directive

==========

Set-17

Question # 1
Which of the following pins of a parallel port connector are grounded
10-18
18-25 is correct answer.
25-32
32/39

Question # 2

Which of the following is a special type of interrupt that returns to the same instruction instead of the next instruction
Divide overflow interrupt [possible answer. To confirm see **INTO** in handouts]
Debug interrupt
Arithmetic Overflow Interrupt
Change of sign interrupt

Question # 3
Each thread can have their own
Execution area
Stack
Memory
Array

Question # 4
Direction flag, the interrupt flag, and the trap flag are
Used for mathematical operations
Not used for mathematical operations
Status flags
Not status flags

Question # 5
When 2 devices in the system want to use the same IRQ line then what will happen?
An IRQ collision
An IRQ conflict [correct answer.]
An IRQ crash
An IRQ block area

Question # 6
Memory address spaces is selected when which of the following instructions is given to the processor?
MOV [correct answer, see page 107]
DEC
IN
ADD

Question # 7
The thread registration code initializes the PCB and adds it to the linked list so that the ---------- will give it a turn.
Assembler
Scheduler
Linker
Debugger

Question # 8
Which of the following IRQs is derived by a keyboard?
IRQ 0
IRQ 1 [correct answer]
IRQ 2
IRQ 3

Question # 9
Which of the following IRQs is used for Floppy disk derive?
IRQ 4

IRQ 5
IRQ 6 [correct answer]
IRQ 7

Quiz#10
The process of sending signal back and forth is called:
Activity
Hand-Shaking
Interruption
Time clicking

==========

Set-18

Hard disk MBR(Master Boot Record) is of size

Select correct option:

- 446 bytes
- 350 bytes
- 512 bytes
- 256 bytes

Click here to Save Answer & Move to Next Question

A FAT32 file system directory entry in DOS consist of how many bytes ?

Select correct option:

- 16
- 24
- 32

64

Click here to Save Answer & Move to Next Question

A 32-bit address register can access up to ____ of memory.

Select correct option:

2 MB

2 GB

4 MB

4 GB

Click here to Save Answer & Move to Next Question

Operating system Organize data in the form of

Select correct option:

Folder

Batch file

File

None of the above

Click here to Save Answer & Move to Next Question

In the context of video services, if we want to get text mode chargen then which of the value place in AX.

Select correct option:

- 1110h
- 1010h
- 0011h
- 0001h

Video write string page number place in which of the register

Select correct option:

- AH
- BL
- CL
- none of the above

Click here to Save Answer & Move to Next Question

The video services are exported via

Select correct option:

- INT10
- INT9

- INT8
- INT7

Click here to Save Answer & Move to Next Question

In 9pin DB 9 connector, which pin is assigned to Signal Ground ?

Select correct option:

- 3
- 4
- 5
- 6

The 'program segment prefix' for com files is of size:

Select correct option:

- 64 bytes
- 128 bytes
- 256 bytes
- 512 bytes

Click here to Save Answer & Move to Next Question

COM1 is connected with

Select correct option:

- IRQ2
- IRQ3
- IRQ4
- IRQ5

==========

Set-19

Quiz Start Time: 07:06 PM

Question # 1 of 10 (Start time: 07:06:34 PM)

Which of the following interrupts is Non maskable interrupt?

Select correct option:

- INT 0
- INT 1
- INT 2
- INT 3

Quiz Start Time: 07:06 PM

Question # 2 of 10 (Start time: 07:07:18 PM)

When two devices in the system want to use the same IRQ line then what will happen?

Select correct option:

- A) An IRQ Collision
- B) An IRQ Conflict
- C) An IRQ Crash
- D) An IRQ Blockage

Quiz Start Time: 07:06 PM

Question # 3 of 10 (Start time: 07:07:39 PM)

In the instruction "mov word [es:160], 0x1230", 12 means:

Select correct option:

- green color on black background
- green color on blue background
- black color on green background
- blue color on green background

Quiz Start Time: 07:06 PM

Question # 4 of 10 (Start time: 07:09:02 PM)

Register are storage cell

Select correct option:

- Outside the processor
- Both inside and outside the processor
- Inside the processor
- None of the given

Quiz Start Time: 07:06 PM

Question # 5 of 10 (Start time: 07:09:39 PM)

The interrupt mask register which can be used for selectively enabling or disabling interrupts is associated with

Select correct option:

- Port 19
- Port 20
- Port 21
- Port 22

Quiz Start Time: 07:06 PM

Question # 6 of 10 (Start time: 07:10:20 PM)

Each thread can have their own

Select correct option:

- execution area
- stack
- memory
- array

Quiz Start Time: 07:06 PM

Question # 7 of 10 (Start time: 07:11:19 PM)

The thread registration code initializes the PCB and adds it to the linked list so that the _____ will give it a turn.

Select correct option:

- Assembler
- Scheduler
- Linker
- Debugger

Quiz Start Time: 07:06 PM

Question # 8 of 10 (Start time: 07:12:27 PM)

All the registers & stack are saved in

Select correct option:

- multitasking
- multi-processing
- function call
- BIOS

Quiz Start Time: 07:06 PM

Question # 9 of 10 (Start time: 07:13:04 PM)

PUSH increments SP (the stack pointer) by two and then transfers a word from the source operand to the top of stack now pointed to by SP

Select correct option:

- True
- False

==========

Set-20

1. Immediate operands of Push are called:-
a. Source Operands
b. Destination Operands
c. Data Operands
d. Stack Operands
2. Extended ASCII has how many characters:-
a. 64
b. 128
c. 256
d. 512
3. The video attribute byte of Red component of foreground color is:-
a. 2
b. 3
c. 4
d. 5
4. Process of sending signals bak & forth is called:-
a. Programming
b. Activity
c. Interruption
d. Communication
5. 32 Bit Processor has an accumulator of :-
a. 8 Bits
b. 16 Bits
c. 32 Bits
d. 64 Bits
6. When a relative address is stored in 16 Bits then the jump is known as:-
a. Near
b. Short

c. Far
d. Close
7. In order to convert digit into ASCII value following is added:-
a. 0x20
b. 0x30
c. 0x40
d. 0x100
8. Replace following invalid instructions with single valid instruction:- 2 Marks
a. Mov IP
b. Mov IP, L5

==========

Set-21

Question # 1 of 10 Total Marks: 1
When two devices in the system want to use the same IRQ line then what will happen? Select correct option:
An IRQ Conflict
An IRQ Crash
An IRQ Collision
An IRQ Blockage
Question # 2 of 10 Total Marks: 1
Hard disk MBR(Master Boot Record) is of size_____. Select correct option:
446 bytes
350 bytes
512 bytes
256 bytes
Question # 3 of 10 Total Marks: 1
Which of the following IRQs is connected to serial port COM 2? Select correct option:
IRQ 0
IRQ 1
IRQ 2
IRQ 3
Question # 4 of 10 Total Marks: 1
The first sector on hard disk contains the
Select correct option:
Hard disk size
Partition table
Data size
Sector size
Question # 5 of 10 Total Marks: 1
In programmable interrupt controller which of the following ports is referred as a control
port?
Select correct option:
19
20
21
22
Question # 6 of 10 Total Marks: 1
Which of the following IRQs is used by the parallel port? Select correct option:
IRQ 4
IRQ 5
IRQ 6

IRQ 7

Question # 7 of 10 Total Marks: 1
The programmable interval timer (PIT) has input frequency of Select correct option:
1.193MHZ
2.193MHZ
3.193MHZ
4.193MHZ

Question # 8 of 10 Total Marks: 1
CX register mostly use a
Select correct option:
Counter register
Flag register
Base register
Desination register
Question # 9 of 10 Total Marks: 1
The input frequency of the programmable interval timer (PIT) is Select correct option:
Fixed
Depends on processor clock
Variable
Depends on hardware attached

Question # 10 of 10 Total Marks: 1
The thread registration code initializes the PCB and adds it to the linked list so that the _____ will give it a turn.
Select correct option:
Assembler
Scheduler
Linker
Debugger
Question # 1 of 10 Total Marks: 1
INT13 --BIOS disk services" generally uses which register to return the 'error code' ? Select correct option:
CF
DL
AH
AL
Question # 2 of 10 Total Marks: 1
Operating system Organize data in the form of
Select correct option:
Folder
Batch file
File
None of the above

Question # 3 of 10 Total Marks: 1
___ decrements SP (the stack pointer) by two and then transfers a word from the source operand to the top of stack now pointed to by SP.
Select correct option:
PUSH
POP
CALL
MOV

Question # 4 of 10 Total Marks: 1
Which of the following interrupts is Non maskable interrupt? Select correct option:
INT 0
INT I
INT 2
INT 3

Question # 5 of 10 Total Marks: 1
The maximum parameters a subroutine can receive are_____ when all the general registers are used.
Select correct option:
6
7
5
4
Question # 6 of 10 Total Marks: 1
When the operand of DIV instruction is of 16-bits then implied dividend will be stored in_____
Select correct option:
AX register
The concatenation of DX and AX
The concatenation of ES and AX
The concatenation of DS and BX
Question # 7 of 10 Total Marks: 1
COM2 is connected with
Select correct option:
IRQ 2
IRQ 3
IRQ 4
IRQ 5
Question # 8 of 10 Total Marks: 1
The parallel port connector is called?
Select correct option:
BD-24
BD-25
DB-25
DB-24

Question # 9 of 10 Total Marks: 1
The instruction to call any software interrupt is Select correct option:
GO INT interrupt_number
Call interrupt_number
INT interrupt_number
Call INT interrupt_number
Question # 10 of 10 Total Marks: 1
The INT 0x13 service 0x03 is use to
Select correct option:
Get drive parameter
Reset disk sector
Write disk sector
Read disk sector

Question # 1 of 10 Total Marks: 1
Data bus is

Select correct option:
Uni-directional
Bi-directional
Non-directional
None of the given
Question # 2 of 10 Total Marks: 1
PUSH increments SP (the stack pointer) by two and then transfers a word from the source operand to the top of stack now pointed to by SP.
Select correct option:
True
False
Question # 3 of 10 Total Marks: 1
Peripheral address space is selected when which of the following instructions is given to the processor?
Select correct option:
MOV
DEC
IN
ADD

Question # 4 of 10 Total Marks: 1
Creation of threads can be
Select correct option:
Static
Dynamic
Both
None of the above
Question # 5 of 10 Total Marks: 1
Which of the following IRQs is used by the parallel port? Select correct option:
IRQ 4
5
6
7

Question # 6 of 10 Total Marks: 1
Priority of IRQ 0 interrupt is
Select correct option:
Highest
low
medium
None of the above

Question # 7 of 10 Total Marks: 1
The number of pins in a parallel port connector are? Select correct option:
20
25
30
35
Question # 8 of 10 Total Marks: 1
The interrupt call loads new values in CS, IP and Select correct option:
DS
SS
FLAG
Bookmark

Question # 9 of 10 Total Marks: 1
All the registers and stacks are saved in
Select correct option:
Multitasking
Multi Processing
Function Call
BIOS
Question # 10 of 10 Total Marks: 1
In 9 pin DB connector ,which pin is assigned to TD. Select correct option:
1
2
3
4

1. Assembly language is not a low level language.
a. True
b. False
2. In case of COM File first command parameter is stored at _____ offset of program
segment prefix.
a. 0x80 (Not Confirm)
b. 0x82
c. 0x84
d. 0x86
3. Address always goes from
a. Processor to meory
b. Memory to processor
c. Memory to memory
d. None of the above
4. The source register in OUT is
a. AL or AX
b. BL or BX
c. CL or CX
d. DL or DX
5. By default CS is associated with
a. SS
b. BP
c. CX
d. IP
6. Which of the following pins of parallel port are grounded
a. 10-18
b. 18-25
c. 25-32
d. 32-39
7. In the instruction mov word [es:160], 0x1230, 30 represents the character
a. A
b. B
c. 0
d. 1
8. On executing 0x21 0x3D, if file cant be opened then
a. CF will contain 1
b. CF will contain 0
c. ZF will contain 1

d. ZF will contain 0

9. Which of the following IRQ is cascading interrupt

a. IRQ 0

b. IRQ 1

c. IRQ 2

d. IRQ 3

10. The execution of instruction mov word [es:160], 0x1230, will print a character on the screen at

a. First column of second row

b. Second column of first row

c. Second column of second row

d. First column of third row

Question No: 1 (Marks: 1) - Please choose one

To transfer control back the RET instruction take

· 1 argument

· 1 argument

· 3 arguments

· No arguments

Question No: 2 (Marks: 1) - Please choose one

In STOSB instruction SI is decremented or incremented by 4

1

2

3

Question No: 3 (Marks: 1) - Please choose one

CMPS instruction subtracts the source location _____from the destination location.

DS:SI

DS:DI

ES:SI

ES:DI

Question No: 4 (Marks: 1) - Please choose one

Regarding assembler, which statement is true:

Assembler converts mnemonics to the corresponding OPCODE

Assembler converts OPCODE to the corresponding mnemonics Assembler executes the assembly code all at once

Assembler executes the assembly code step by step

Question No: 5 (Marks: 1) - Please choose one

If “BB” is the OPCODE of the instruction which states to “move a constant value to AX register”, the hexadecimal representation (Using little Endian notation) of the instruction “Mov AX,336” (“150” in hexadecimal number system) will be:

· 0xBB0150

· 0x5001BB

· 0x01BB50

· 0xBB5001

Question No: 6 (Marks: 1) - Please choose one

In the instruction MOV AX, 5 the number of operands are

· 1

· 2
· 3
· 4

Question No: 7 (Marks: 1) - Please choose one

The maximum parameters a subroutine can receive (with the help of registers) are

· 6
· 7
· 8
· 9

Question No: 8 (Marks: 1) - Please choose one

In assembly the CX register is used normally as a _____register.

· source
· counter
· index
· pointer

Question No: 9 (Marks: 1) - Please choose one

All the addressing mechanisms in iAPX 8 8 return a number called _ _ _ _ _ _ _ _ _ _ _ _ _ address .

· effective
· faulty
· indirect
· direct

Question No: 10 (Marks: 1) - Please choose one

When a 16 bit number is divided by an 8 bit number, the dividend will be in

· AX
· BX
· CX
· DX

Question No: 11 (Marks: 1) - Please choose one

in Left-Shift-Operation the left most bit _____

· will drop
· will go into CF
· Will come to the right most
· will be always 1

Question No: 12 (Marks: 1) - Please choose one

Suppose the decimal number "35" after shifting its binary two bits to left, the new value becomes _____

· 35
· 70
· 140
· 17

Question No: 13 (Marks: 1) - Please choose one

When divide overflow occurs processor will be interrupted this type of interrupt is called

· Hardware interrupt
· Software interrupt
· Processor exception
· Logical interrupts

Question No: 14 (Marks: 1) - Please choose one

Which mathematical operation is dominant during the execution of SCAS instruction

· Division
· Multiplication
· Addition
· Subtraction

Question No: 15 (Marks: 1) - Please choose one

After the execution of REP instruction CX will be decremented then which of the following flags will be affected?

- CF
- OF
- DF
- No flags will be affected

Question No: 16 (Marks: 1) - Please choose one

_____ is one of the reasons due to which string instructions are used in 8088

- Efficiency and accuracy
- Reduction in code size and accuracy
- Reduction in code size and speed
- Reduction in code size and efficiency

Question No: 1 (Marks: 1) - Please choose one

The physical address of the stack is obtained by

- SS:SI combination
- SS:SP combination
- ES:BP combination
- ES:SP combination

Question No: 2 (Marks: 1) - Please choose one

After the execution of instruction "RET "

- SP is incremented by 2
- SP is decremented by 2
- SP is incremented by 1
- SP is decremented by 1

Question No: 3 (Marks: 1) - Please choose one

The second byte in the word designated for one screen location holds

- The dimensions of the screen
- Character position on the screen
- Character color on the screen
- ASCII code of the character

Question No: 4 (Marks: 1) - Please choose one

REP will always

- Increment CX by 1
- Increment CX by 2
- Decrement CX by 1
- Decrement CX by 2

Question No: 5 (Marks: 1) - Please choose one

The basic function of SCAS instruction is to

- Compare
- Scan
- Sort
- Move data

Question No: 6 (Marks: 1) - Please choose one

Index registers are used to store _____

- Data
- Intermediate result
- Address
- Both data and addresses

Question No: 7 (Marks: 1) - Please choose one
The bits of the _____ work independently and individually
►index register
►base register
►flags register
►accumulator

Question No: 8 (Marks: 1) - Please choose one
To convert any digit to its ASCII representation
► Add 0x30 in the digit
► Subtract 0x30 from the digit
► Add 0x61 in the digit
► Subtract 0x61 from the digit

Question No: 9 (Marks: 1) - Please choose one
When a 32 bit number is divided by a 16 bit number, the quotient is of
► 32 bits
► 16 bits
► 8 bits
► 4 bits

Question No: 10 (Marks: 1) - Please choose one
When a 16 bit number is divided by an 8 bit number, the quotient will be in
► AX
► AL
► AH
► DX

DIV instruction available in the 8088 processor. There are two forms of the DIV instruction. The first form divides a 32bit number in DX:AX by its 16bit operand and stores the 16bit quotient in AX and the 16bit remainder in DX. The second form divides a 16bit number in AX by its 8bit operand and stores the 8bit quotient in AL and the 8bit remainder in AH.

Question No: 11 (Marks: 1) - Please choose one
Which mathematical operation is dominant during the execution of SCAS instruction
► Division
► Multiplication
► Addition
► Subtraction

Question No: 12 (Marks: 1) - Please choose one
If AX contains decimal -2 and BX contains decimal 2 then after the execution of instructions: CMP AX, BX JA label
► Jump will be taken
► Zero flag will set
► ZF will contain value -4
► Jump will not be taken

Question No: 13 (Marks: 1) - Please choose one
The execution of the instruction “mov word [ES : 160], 0x1230” will print a character “0” on the screen at
► Second column of first row
► First column of second row
► Second column of second row

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Set-22

Question No: 14 (Marks: 1) - Please choose one
If the direction of the processing of a string is from higher addresses towards lower addresses
then
► ZF is cleared
► DF is cleared
► ZF is set
► DF is set

Question No: 15 (Marks: 1) - Please choose one
The instruction ADC has_____ Operand(s)
► 0
► 1
► 2
► 3

Question No: 16 (Marks: 1) - Please choose one
Which bit of the attributes byte represents the red component of background color ?
► 3
► 4
► 5
► 6

Q=1:
Which bit of attributes byte represents the blue component of foreground color?
0
· 1
· 2
· 3

Q=2:
The clear screen operation initializes the whole block of video memory to:
· 0417
· 0714
· 0741
· 0720

Q=3:
When the operand of DIV instruction is of 16 bit then implied dividend will be of
· 64-bit
· 32-bits
· 16-bits
· 8--bits

Q=4
Which of the following is the pair of register used to access memory in string instruction:
· DI and BP
· SI and BP
· DI and SI
· DS and Si

Q=5
A fat32 file system directory entry in DOS consists of how many bytes?
- 16
- 24
- 32
- 64

Q=6:
Which register is generally used to specify the services number of an interrupt?
DX
AX
BX
CX
……
Q=7:
In 9 pin db 9 connector ,which pin is assigned to RD(received data)
- 1
- 2
- 3
- 4

Q=8
In case of COM file, maximum length of parameters passed through command line can be…….
- 63 bytes
- 127bytes
- 255 bytes
- 511 bytes

Q=9
We can access the DOS service using;
- Int 0x21
- Int 0x13
- Int 0x 10
- Int 0x 08

Q=10
In 9 pin 9 connector,which pin is assigned to signal ground

- 3
- 4
- 5
- 6

Q=11:
BPB stands for
- Basic parameter block
- Bios precise block
- Basic precise block
- Bios parameter block

Q=12
Int 13-bios disk service "generally uses which register to return the error flag?

- CF
- DL
- AH

- AL

Q=13:
The first sector on the hard disk contains the
- Hard disk size
- Partition table
- Data size
- Sector size

Q=14
Operating system organize data in the form of
- Folder
- Batch file
- File
- None of above

.....
Q=15
In 9 pin db 9 connector, which pin is assigned to TD(transmitted data)

- 1
- 2
- 3
- 4

Q=16”
Device derive can be divided into ----------major categories.
- 5
- 4
- 3
- 2

1. BL contains 5 decimal then after right shift , BL will become
- 3
- 2.5
- 5
- 10

2. 8 * 16 font is stored in _____ bytes.
- 3
- 4
- 8
- 16

3. In DOS input buffer , number of characters actually read on return is stored in
- First byte
- Second byte
- Third byte
- Fourth byte

4. IRQ 0 has priority
- Low
- High
- Highest

- Medium

5. Thread registration code initialize PCB and add to linked list so that _____ will give it turn.
- Assembler
- Linker
- Scheduler
- Debugger

6. Traditional calling conventions are in _____ number

- 1
- 2
- 3
- 4

7. VESA VEB 2.0 is standard for
- High Resolution Mode
- Low Resolution Mode
- Very High Resolution Mode
- Medium Resolution Mode

8. To clear direction flag which instruction is used

- Cld
- Clrd
- Cl df
- Clr df

9. In STOSW instruction , When DI is cleared , SI is

- Incremented by 1
- Incremented by 2
- Decremented by 1
- Decremented by 2

10. Interrupt that is used in debugging with help of trap flag is
- INT 0
- INT 1
- INT 2
- INT 3

11. INT for arithmetic overflow is
- INT 1
- INT 2
- INT 3
- INT 4

12. IRQ referred as
- Eight Input signals
- One Input signal
- Eight Output signals
- One output signal

13. IRQ for keyboard is ____1_____
14. IRQ for sound card is _____5_____
15. IRQ for floppy disk is _____6_____
16. IRQ with highest priority is
- Keyboard IRQ
- Timer IRQ
- Sound Card

· Floppy Disk

17. Pin for parallel port ground is
· 10-18
· 18-25
· 25-32
· 32-39
18. The physical address of Interrupt Descriptor Table (IDT) is stored in · GDTR
· IDTR
· IVT
· IDTT

19. Execution of "RET 2" results in?
20. CX register is
· Count register
· Data register
· Index register
· Base register
21. OUT instruction uses __AX_____ as source register.

22. IN DB-9 connector the Data Set ready pin is at
· 5
· 6
· 7
· 8
23. If two devices uses same IRQ then there is
· IRQ collision
· IRQ conflict
· IRQ drop
24. VESA organizes 16 bit color for every pixel in ratio
· 5:5:5
· 5:6:5
· 6:5:6
· 5:6:7
25. Division by zero is done by which interrupt.
Interrupt 0.

Question No: 1 (Marks: 1) - Please choose one
After the execution of SAR instruction

► The msb is replaced by a 0
► The msb is replaced by 1

► The msb retains its original value
► The msb is replaced by the value of CF

Question No: 2 (Marks: 1) - Please choose one
RETF will pop the offset in the
► BP
► IP
► SP
► SI

Question No: 3 (Marks: 1) - Please choose one
The routine that executes in response to an INT instruction is called
► ISR
► IRS
► ISP
► IRT

Question No: 4 (Marks: 1) - Please choose one
The first instruction of "COM" file must be at offset:
► 0x0010
► 0x0100
► 0x1000
► 0x0000

Question No: 5 (Marks: 1) - Please choose one
"Far" jump is not position relative but is _____
► memory dependent
► Absolute
► temporary
► indirect

Question No: 6 (Marks: 1) - Please choose one
Only _____ instructions allow moving data from memory to memory.

► string
► word
► indirect
► stack

Question No: 7 (Marks: 1) - Please choose one
After the execution of instruction "RET 2"

► SP is incremented by 2
► SP is decremented by 2
► SP is incremented by 4
► SP is decremented by 4

Question No: 8 (Marks: 1) - Please choose one
DIV instruction has

► Two forms
► Three forms
► Four forms
► Five forms

Question No: 9 (Marks: 1) - Please choose one
When the operand of DIV instruction is of 16 bits then implied dividend will be of

► 8 bits
► 16 bits
► 32 bits
► 64 bits

Question No: 10 (Marks: 1) - Please choose one

After the execution of MOVS instruction which of the following registers are updated
► SI only

► DI only
► SI and DI only

► SI, DI and BP only

Question No: 11 (Marks: 1) - Please choose one
In 8088 architecture, whenever an element is pushed on the stack
► SP is decremented by 1
► SP is decremented by 2
► SP is decremented by 3
► SP is decremented by 4
Question No: 12 (Marks: 1) - Please choose one
When a very large number is divided by very small number so that the quotient is larger than the space provided, this is called

► Divide logical error
► Divide overflow error
► Divide syntax error
► An illegal instruction

Question No: 13 (Marks: 1) - Please choose one
In the word designated for one screen location, the higher address contains

► The character code
► The attribute byte
► The parameters
► The dimensions
Question No: 14 (Marks: 1) - Please choose one
Which of the following options contain the set of instructions to open a window to the video memory?
► mov AX, 0xb008
mov ES, AX
► mov AX, 0xb800
mov ES, AX
► mov AX, 0x8b00
mov ES, AX
► mov AX, 0x800b
mov ES, AX
Question No: 15 (Marks: 1) - Please choose one

In a video memory, each screen location corresponds to
► One byte
► Two bytes
► Four bytes
► Eight bytes

Question No: 16 (Marks: 1) - Please choose one
The execution of the instruction “mov word [ES : 0], 0x0741” will print character “A” on screen , background color of the screen will be
► Black

► White
► Red
► Blue

Question No: 1 ___(Marks: 1) - Please choose one
Which of the following is not true about registers?

· Their operation is very much like memory
· Intermediate results may also be stored in registers. · They are also called scratch pad ram
· None of given options.

Question No: 2 ___(Marks: 1) - Please choose one
move [bp], al moves the one byte content of the AL register to the address contained in BP register in the current

· Stack segment
· Code segment
· Data segment
· Extra segment

Question No: 3 (Marks: 1) - Please choose one
In a rotate through carry right (RCR) instruction applied on a 16 bit word Effectively there is

· 16 bits rotation
· 1 bit rotation
· 17 bits rotation
· 8 bits rotation

Question No: 4__ (Marks: 1) - Please choose one The 8088 stack works on
· Word sized elements
· Byte sized elements
· Double sized element
· Nible sized element

Question No: 5 (Marks: 1) - Please choose one
An 8 x 16 font is stored in.....Bytes

· 2
· 4
· 8
· 16

Question No: 6 (Marks: 1) - Please
INT 10 is used for.....services.
· RAM
· Disk
· BIOS video
· DOS video

Question No: 7 __ (Marks: 1) - Please choose one

Priority of IRQ 0 interrupt is
- medium
- high
- highest
- low

Question No: 8 __ (Marks: 1) - Please choose one

Threads can have function calls, parameters and _____variables. · global
- local
- legal
- illegal

Question No: 9 __ (Marks: 1) - Please choose
one How many prevalent calling conventions do.....exist

- 1
- 2
- 3
- 4

VERY IMPORTANT

Question No: 10 (Marks: 1) - Please choose
In 9pin DB 9 DSR is assigned on pin number
- 4
- 5
- 6
- 7

Question No: 11
(Marks: 1) - Please
choose one In 9pin DB 9 CTS is assigned on pin number
- 6
- 7
- 8
- 9

Question No: 12__ (Marks: 1) - Please choose one
In 9pin DB 9 CD is assigned on pin number
- 1
- 2
- 3
- 4

Question No: 13__ (Marks: 1) - Please choose one
In 9pin DB 9 RD is assigned on pin number
- 1
- 2
- 3
- 4

Question No: 14 __ (Marks: 1) - Please choose one
in device attribute word which of the following bit decides whether it is a cha rater

- device or a block device
- Bit 12 Bit 13

- Bit 14
- Bit 15

Question No: 15__ (Marks: 1) - Please choose one
Video services are classified into _____broad categories

- 2
- 3
- 4
- 5

Question No: 16 (Marks: 1) - Please choose one
In STOSB instruction, when DF is clear, SI is

- Incremented by 1
- Incremented by 2
- Decremented by 1
- Decremented by 2

Question No: 17 (Marks: 1) - Please choose one The process of sending signals back and forth is called

- Activity
- Hand-shaking
- Interruption
- Time clicking

Question No: 18 (Marks: 1) - Please choose one
which of the following is a special type of interrupt that returns to the same instruction instead of the next instruction

- Divide overflow interrupt
- Debug interrupt
- Arithmetic overflow interrupt
- Change of sign interrupt

Question No: 19 ___(Marks: 1) - Please choose one
Which of the following IRQs is derived by a timer device?

- IRQ 0
- IRQ 1
- IRQ 2
- IRQ 3

Question No: 20 __ (Marks: 1) - Please choose one
Which of the following interrupts is used for Arithmetic overflow

- INT 1
- INT 2
- INT 3
- INT 4

Question No: 21 __ (Marks: 1) - Please choose one
Which of the following IRQs is connected to serial port COM 2?

- IRQ 0
- IRQ 1

- IRQ 2
- IRQ 3

Question No: 22 __ (Marks: 1) - Please choose one
An End of Interrupt (EOI) signal is sent by
- Handler
- Processor
- IRQ
- PIC

Question No: 23 __ (Marks: 1) - Please choose one
The source registers in OUT is
- AL or AX
- BL or BX
- CL or CX
- DL or DX

Question No: 24 (Marks: 1) - Please choose one
In programmable interrupt controller which of the following ports is used for selectively enabling or disabling interrupts
- 19
- 20
- 21
- 22

Question No: 25 (Marks: 1) - Please choose one
The number of pins in a parallel port connector are?
- 25
- 30
- 35
- 45

Question No: 26 (Marks: 1) - Please choose one
Which of the following pins of a parallel port connector are grounded?
- 10-18
- 18-25
- 25-32
- 32-39

Question No: 27 __ (Marks: 1) - Please choose one
Suppose a decimal number 35 when its binary is shifted to write two places the

new number will become
- 35
- 70
- 140
- 17

Question No: 28 __ (Marks: 1) - Please choose one
A 32bit address register can access upto ...
access has increased a lot.

- 2GB
- 4GB
- 6GB
- 8GB

Question No: 29 __ (Marks: 1) - Please choose one
In NASM an imported symbol is declared with the ... symbol is declared with the ...
- Global directive, External directive
- External directive, Global directive
- Home Directive, Foreign Directive
- Foreign Directive, Home Directive

Question No: 30 (Marks: 1) - Please choose
one Single step interrupt is

Question No: 1 (Marks: 1)
- Please choose one .of memory so memory
..while and exported
Sun SPARC Processor has a fixed _____ instruction size.
- 16bit
- 32bit
- 64bit
- 20bit

Question No: 2 (Marks: 1)
- Please choose one
When the subprogram finishes, the _____ retrieves the return address from the stack and transfers control to that location.
- RET instruction
- CALL instruction
- POP instruction
- Jump instruction

Question No: 3 (Marks: 1)
- Please choose one
A 32 bit address register can access upto _____ of memory.
- 1 GB
- 6 GB
- 4 GB
- 2 GB

Question No: 4 (Marks: 1)
- Please choose one
The value of a segment register when the processor is running under protected mode is called
- segment descriptor
- segment selector
- global descriptor table
- protected register

Question No: 5 (Marks: 1)
- Please choose one
FS and GS are two _____ in protected mode.
- segment registers

- segment selectors
- stack pointers
- register pointers

Question No: 6 (Marks: 1)
- Please choose one
IRQ 0 interrupt have _____ priority
- low
- medium
- highest
- lowest

Question No: 7 (Marks: 1)
- Please choose one
IDT stands for _____.
- interrupt descriptor table
- individual descriptor table
- inline data table
- interrupt descriptor table

Question No: 8 (Marks: 1)
- Please choose one
Every bit of line status in serial port conveys _____ information.
- different
- same
- partial
- full

Question No: 9 (Marks: 1)
- Please choose one

There are total _____ bytes in a standard floppy disk.
- 1444k
- 1440k
- 1280k
- 2480k

Question No: 10 (Marks: 1)
- Please choose one
An 8x16 font is stored in _____ bytes.
- 8
- 16
- 4
- 20

. Serial Port is also accessible via I/O ports , COM 1 is accessible via ports 3F8-3FF while COM 2 is accessible via 2F8 -2FF.
The first register at 3F8 is the Transmitter holding register if written to and the receiver
buffer register if read from.

Other register of our interest include 3F9 whose Bit 0 must be set to enable received data
available interrupt and Bit 1 must be set to enable transmitter holding register empty
interrupt.
(Transmitter, COM 1, I/O ports , COM2. bit 0 , Buffer , 3FA)

Question # 1
There are three busses to communicate the processor and memory named as _____
1) : address bus.,data bus and data bus.
2) : addressing bus.,data bus and data bus.
3) : address bus.,datamove bus and data bus.
4) : address bus.,data bus and control bus..

Question # 2
The address bus is unidirectional and address always travels from processor to memory.
1) : TRUE
2) : FALSE

==========

Set-23

1. Assembly language is not a low level language.
a. True
b. False

2. In case of COM File first command parameter is stored at _____ offset of program segment prefix.
a. 0x80 (Not Confirm)
b. 0x82
c. 0x84
d. 0x86

3. Address always goes from
a. Processor to meory
b. Memory to processor
c. Memory to memory
d. None of the above

4. The sourse register in OUT is
a. AL or AX
b. BL or BX
c. CL or CX
d. DL or DX

5. By default CS is associated with
a. SS
b. BP
c. CX
d. IP

6. Which of the following pins of parallel port are grounded

a. 10-18
b. 18-25
c. 25-32
d. 32-39

7. In the instruction mov word [es:160], 0x1230, 30 represents the character
a. A
b. B
c. 0
d. 1

8. On executing 0x21 0x3D, if file cant be opened then
a. CF will contain 1
b. CF will contain 0
c. ZF will contain 1
d. ZF will contain 0

9. Which of the following IRQ is cascading interrupt
a. IRQ 0
b. IRQ 1
c. IRQ 2
d. IRQ 3

10. The execution of instruction mov word [es:160], 0x1230, will print a character on the screen at
a. First column of second row
b. Second column of first row
c. Second column of second row
d. First column of third row

1)))SHR and SAL are same?
.True (correct)
.False
2)))mov ax,0 will set ZF flag
.True
.False
3)))In 9 pin DB connector ,which pic is assigned to TD.
1
2
3(correct)
4
4)))Lower 16 bits of EAX are labeled as
. AX(correct)
. BX
.EAX
.none of above
5))) which is the special prefix used for repeating a block .rep(correct)
.repeat
.repb
.repe
6)) JA can not after cmp if unsigned destinition is greater than source
.true
.false

Q=1
Conditional jump can only:

1. Far
2. short
3. near
4. all of the given

q=2:
Address is always go from:
1. Processor to memory
2. Memory to processor
3. Memory to memory
4. None of given

Q=3;
Programmable interrupt controllers have two ports 20 and 21……port 20 is a control port
while port 21 is ……..
1. The interrupt make register
2. Interrupt port
3. Output port
4. Input port

Q=4:

In the instruction “move word[es:160],0x1230 represent the charechter.....
1. A
2. B
3. 0
4. 1

Q=5:
The 8088 processor divides interrupts into how many classes?
1. 2
2. 3
3. 4
4. 5

Q=6:
Which of the following is the pair of register used to access memory in string instruction?
1. DI and BP
2. SI and BP
3. DI and SI
4. DS and SI

Q=7:
In case of COM file,first command line parameter is stored at .....offset of program segment prefix’
1. 0x80
2. 0x82
3. 0x84
4. 0x86

Q=8:
The INT 0x13 service 0x03 is use to ...
1. Read disk sector
2. Write disk sector
3. Reset disk sector
4. Get drive parameters

Q=9:
After the execution of STOSWB,the CX wil be.....
1. Incremented by 1
2. Incremented by 2
3. Decremented by 1
4. Decremented by 2

Q=10
The execution of the instruction “mov word [ES:160],0x1230”will print a character on the screen at:
1. First column of second row
2. Second column of first row
3. Second column of second row
4. First column of third row

==========

Set-24

==========

Set-25

1)))SHR and SAL are same?
.True (correct)
.False
2)))mov ax,0 will set ZF flag
.True
.False
3)))In 9 pin DB connector ,which pic is assigned to TD.
. 1
. 2
. 3(correct)
. 4
4)))Lower 16 bits of EAX are labeled as
. AX(correct)
. BX
.EAX
.none of above
5))) which is the special prefix used for repeating a block
.rep(correct)
.repeat
.repb
.repe
6)) JA can not after cmp if unsigned destinition is greater than source
.true
.false

CS401 quiz 27 july by Naveed
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c. 0x84
d. 0x86

3. Address always goes from
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c. Memory to memory
d. None of the above

4. The sourse register in OUT is
a. AL or AX
b. BL or BX
c. CL or CX
d. DL or DX

5. By default CS is associated with
a. SS
b. BP
c. CX
d. IP

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a. 10-18
b. 18-25
c. 25-32
d. 32-39

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b. CF will contain 0
c. ZF will contain 1
d. ZF will contain 0

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a. IRQ 0
b. IRQ 1
c. IRQ 2
d. IRQ 3

10. The execution of instruction mov word [es:160], 0x1230, will print a character on the screen at
a. First column of second row
b. Second column of first row
c. Second column of second row
d. First column of third row

==========

Set-26

Question No: 01 (Marks: 1) - Please choose one
In a video memory, each screen location corresponds to
• One byte
• **Two bytes**
• Four bytes
• Eight bytes
Question No:02 6 (Marks: 1) - Please
INT 10 is used for.....services.
• . RAM
• . Disk
• . BIOS video
• **. DOS video**
Question No: 03 (Marks: 1) - Please choose one
In graphics mode a location in video memory corresponds to a _____ on the screen.
► **line**
► **dot**
► **circle**
► **rectangle**
Question No: 04(Marks: 1)
- Please choose one
IRQ 0 interrupt have _____ priority
• low
• medium
• **highest**
• lowest
Question No: 05(Marks: 1)
In DOS input buffer , number of characters actually read on return is stored in
_ First byte
_ ***Second byte***
_ Third byte
_ Fourth byte
Question No: 06(Marks: 1)
VESA VEB 2.0 is standard for
_ ***High Resolution Mode***
_ Low Resolution Mode
_ Very High Resolution Mode
_ Medium Resolution Mode
Question No: 07(Marks: 1)
Thread registration code initialize PCB and add to linked list so that _____ will give it turn.
_ Assembler
_ Linker
_ ***Scheduler***
_ Debugger
Question No: 08 (Marks: 1) - Please choose one

Which of the following gives the more logical view of the storage medium
► BIOS
► **DOS**
► Both
► None
Question No: 09(Marks: 1)
IRQ 0 has priority
_ Low
_ High
_ ***Highest***
_ Medium
Question No: 10 (Marks: 1) - Please choose one
Which of the following IRQs is used for Floppy disk derive?
► IRQ 4
► IRQ 5
► **IRQ 6**
► IRQ 7
Question No: 11(Marks: 1)
IRQ for sound card is _____***5***_____
Question No: 12 (Marks: 1) - Please choose one
In 68K processors there is a ..... program counter (PC) that holds the address of currently executing instruction
► 8bit
► 16bit
► **32bit**
► 64bit
Question No: 13 (Marks: 1) - Please choose one
In 68K processors there is a **32bit**.---------- that holds the address of currently executing instruction
• **PC**
• RET
• IDT
• IVT
Question No: 14 (Marks: 1) - Please choose one
In NASM an imported symbol is declared with the ..... while and exported symbol is declared with the .....
► Global directive, External directive
► **External directive, Global directive**
► Home Directive, Foreign Directive
► Foreign Directive, Home Directive
Question No: 15 (Marks: 1) - Please choose one
In assembly the CX register is used normally as a _____register.
• source
• **counter**
• index
• pointer
Question No: 16 (Marks: 1) - Please choose one
Which bit of attributes byte represents the blue component of foreground color?
_ **0**
_ 1

_ 2
_ 3

Question No: 17 (Marks: 1) - Please choose one

Which bit of the attributes byte represents the red component of background color ?

► **3**
► 4
► 5
► 6

Question No: 18(Marks: 1) - Please choose one

INT 21 service 01H is used to read character from standard input with echo. It returns the
result in _____ register.

► **AL**
► BL
► CL
► BH

Question No: 19 __ (Marks: 1) - Please choose one

A 32bit address register can access upto .....of memory so
Memory access has increased a lot.

1. 2GB
2. 4GB
3. 6GB
4. 8GB

Question No: 20 (Marks: 1) - Please choose one

Motorola 68K processors have ..... 23bit general purpose registers.

► 4
► 8
► **16**
► 32

Question No: 21 __ (Marks: 1) - Please choose one

The table index is set ----to access GDT

• **0**
• 1
• -1
• -2

Question No: 22 __ (Marks: 1) - Please choose one

All the addressing modes in iAPX88 returns a number called ------addressing

• **Efective**
• Indirect
• Direct
• Faulty

Question No: 23 __ (Marks: 1) - Please choose one

In 9 pin DB connector ,which pic is assigned to RD.

• . 1
• **. 2**
• . 3
• . 4

Question No: 24 __ (Marks: 1) - Please choose one

In 9 pin DB connector ,which pic is assigned to DTR.

• . 1

• . 2
• . 3
• **. 4**

Question No: 25 __ (Marks: 1) - Please choose one
In 9 pin DB connector ,which pic is assigned to DSR.
• **. 6**
• . 5
• . 3
• . 4

Question No: 26 __ (Marks: 1) - Please choose one
. VESA organizes 16 bit color for every pixel in ratio
_ 5:5:5
_ ***5:6:5***
_ 6:5:6
_ 5:6:7

Question No: 27 __ (Marks: 1) - Please choose one
When an item is pushed on decrementing stack the top of the stack is
• First decrement then copied on to stack
• **First increment then copied on to stack**
• Increment after copied on to stack
• Decrement after copied on to stack

Question No: 28 __ (Marks: 1) - Please choose one
When an item is pushed on decrementing stack the top of the stack is
• First decrement then copied on to stack
• First increment then copied on to stack
• Increment after copied on to stack
• Decrement after copied on to stack

Question No: 29 __ (Marks: 1) - Please choose one
The space where all register of a task are stored is called
• Control Block
• **Process control block**
• Stack
• Memory

Question No: 30 __ (Marks: 1) - Please choose one
BIOS INT------ provide SERIAL port services
• **14**
• 13
• 11
• 12

Question No: 31 __ (Marks: 1) - Please choose one
To enable or disable interrupt port------
• **21**
• 20
• 60
• 61

Question No: 32 __ (Marks: 1) - Please choose one
Parallel port is called
• **DB-25**
• BD-25
• DB-24

• BD-24

Question No: 33 __ (Marks: 1) - Please choose one

386 processor is ---------- compatible to IAPX88

• **Down word**
• Up word
• Both
• None

Question No: 34 __ (Marks: 1) - Please choose one

Clearing stack in assembly by using

• Caller
• Callee
• **Ret**
• Stack

Question No: 35 __ (Marks: 1) - Please choose one

In 9 pin DB connector ,which pic is assigned to RI

• 6
• 7
• 8
• **9**

Question No: 35 __ (Marks: 1) - Please choose one

IDTR is ---Register

• 8 bit
• 16bit
• 32bit
• **48bit**

Question No: 36 __ (Marks: 1) - Please choose one

CALL instruction transfer control

• Permanently
• **Temporarily**
• Permanent when CALL is near
• Permanent when CALL is Far

Question No: 37 (Marks: 1) - Please choose one

Which bit of the attributes byte represents Green component of background color?

► 3
► 4
► **5**
► 6

Question No: 38 (Marks: 1) - Please choose one

------- Pin (s) of processor is/are by ecternal hardware to generate INT

► **1**
► 2
► 3
► 4

==========

Set-27

Quiz Start Time: 10:29 AM
Time Left

52 sec(s)
Question # 2 of 10 (Start time: 10:30:40 AM)
Total Marks: 1
The destination registers in IN is ?
Select correct option:

AL or AX Correct :AL or AX

- BL or BX
- CL or CX
- DL or DX

Quiz Start Time: 10:29 AM
Time Left
39 sec(s)
Question # 3 of 10 (Start time: 10:31:29 AM)
Total Marks: 1
In programmable interrupt controller which of the following ports is used for selectively enabling or disabling interrupts ?
Select correct option:

- 19
- 20

21 Correct: 21

- 22

Quiz Start Time: 10:29 AM
Time Left
62 sec(s)
Question # 4 of 10 (Start time: 10:32:30 AM)
Total Marks: 1
Programmable interrupt controller (PIC) has
Select correct option:

- One input signals and eight output signals
- One input signal and one output signal

Eight input signals and one output signalsCorrect :8 input 1 output

- Eight input signals and eight output signals

Quiz Start Time: 10:29 AM
sec(s)
Question # 5 of 10 (Start time: 10:33:10 AM)
Total Marks: 1
The process of sending signals back and forth is called?
Select correct option:

A)Activity Correct:Activity

- B)Hand-shaking
- C)Interruption
- D)Time clicking

Quiz Start Time: 10:29 AM

Question # 6 of 10 (Start time: 10:34:31 AM)
Total Marks: 1
There is no instruction to clear the
Select correct option:

Trap flag Correct:Trap flag

- Interrupt flag
- Direction flag
- None of the above

Quiz Start Time: 10:29 AM
Time Left
54 sec(s)
Question # 7 of 10 (Start time: 10:35:08 AM)
Total Marks: 1
The space where all the registers of a task are stored is called the
Select correct option:

- control block

process control block Correct Answer:PCB

- stack
- memory

Quiz Start Time: 10:29 AM

Question # 8 of 10 (Start time: 10:35:56 AM)
Total Marks: 1
The number of pins in a parallel port connector are?
Select correct option:

- 20

25 Correct Answer:25

- 30
- 35

Quiz Start Time: 10:29 AM

Question # 10 of 10 (Start time: 10:37:48 AM)
Total Marks: 1
An End of Interrupt (EOI) signal is sent by
Select correct option:

- Handler
- Processor
- IRQ

PIC Correct Answer:PIC Program interrupt control.

Quiz Start Time: 10:40 AM

Question # 2 of 10 (Start time: 10:41:52 AM)
Total Marks: 1
Which of the following IRQs is derived by a timer device?
Select correct option:

IRQ 0 Correct Answer:IRQ0

- IRQ 1
- IRQ 2
- IRQ3

Quiz Start Time: 10:40 AM

Question # 3 of 10 (Start time: 10:42:24 AM)
Total Marks: 1

Programmable interrupt controller has two ports 20 and 21. Port 20 is the control port while port 21 is.....
Select correct option:

The Interrupt mask registerCorrect Answer : Interrupt Mask Register

- Interrupt port
- Output port
- Inpuit port

Quiz Start Time: 10:40 AM

Question # 4 of 10 (Start time: 10:43:06 AM)
Total Marks: 1
The number of pins in a parallel port connector are?
Select correct option:

- 20

25Correct Answer:25

- 30
- 35

Quiz Start Time: 10:40 AM

Question # 5 of 10 (Start time: 10:43:57 AM)
Total Marks: 1
Which of the following interrupts is Non maskable interrupt?
Select correct option:

- INT 0
- INT 1

INT 2Correct:INT 2

- INT 3

Quiz Start Time: 10:40 AM

Question # 6 of 10 (Start time: 10:44:31 AM)
Total Marks: 1
The time interval between two timer ticks is ?
Select correct option:

- 40ms
- 45ms
- 50ms

55msCorrect: 55MS

Quiz Start Time: 10:40 AM

Question # 7 of 10 (Start time: 10:45:14 AM)
Total Marks: 1
During the execution of an INT instruction some contents are pushed on to the stack the order of pushing them is Select correct option:

- A)CS, IP and then FLAGS register
- B)IP, CS and then FLAGS register

C)FLAGS register, CS and then IPCorrect : FLAGS ,CS, then IP

- D)FLAGS register, IP and then CS

Quiz Start Time: 10:40 AM

Question # 8 of 10 (Start time: 10:46:42 AM)
Total Marks: 1
The process of sending signals back and forth is called?
Select correct option:

A)Activity Correct: Activity

- B)Hand-shaking
- C)Interruption
- D)Time clicking

Quiz Start Time: 10:40 AM
Question # 9 of 10 (Start time: 10:47:34 AM)
Total Marks: 1
The thread registration code initializes the PCB and adds it to the linked list so that the _____ will give it a turn.
Select correct option:

- Assembler

SchedulerCorrect:Scheduler

- Linker
- Debugger

Quiz Start Time: 10:40 AM

Question # 10 of 10 (Start time: 10:47:59 AM)
Total Marks: 1
In programmable interrupt controller which of the following ports is referred as a interrupt mask register?
Select correct option:

- 19
- 20

21Correct : 21

- 22

Quiz Start Time: 10:50 AM

Question # 1 of 10 (Start time: 10:50:06 AM)
Total Marks: 1
The destination registers in IN is ?
Select correct option:

AL or AXCorrect:AL or AX

- BL or BX
- CL or CX
- DL or DX

Quiz Start Time: 10:50 AM

Question # 2 of 10 (Start time: 10:50:22 AM)
Total Marks: 1
There is no instruction to clear the
Select correct option:

Trap flagCorrect: Trap Flag

- Interrupt flag
- Direction flag

- None of the above

Quiz Start Time: 10:50 AM
Time Left
84 sec(s)
Question # 3 of 10 (Start time: 10:50:39 AM)
Total Marks: 1
Which of the following pins of a parallel port connector are grounded ?
Select correct option:

- 10-18

18-25Correct: 18-25

- 25-32
- 32-39

Quiz Start Time: 10:50 AM
Question # 4 of 10 (Start time: 10:50:57 AM)
Total Marks: 1
The instruction used to read a character from the keyboard port is
Select correct option:

in al, 0x60Correct: in al, 0x60

- out al, 0x60
- in al, 0x80
- out al, 0x80

Quiz Start Time: 10:50 AM

Question # 5 of 10 (Start time: 10:52:05 AM)
Total Marks: 1
Which of the following is the highest priority interrupt
Select correct option:

- INT3
- INT2
- INT1

INT0Correct: INT 0

Quiz Start Time: 10:50 AM
Time Left
61 sec(s)
Question # 6 of 10 (Start time: 10:53:30 AM)
Total Marks: 1
Which of the following IRQs is connected to serial port COM 1?
Select correct option:

IRQ 4 Correct: IRQ 4

- IRQ5
- IRQ 6
- IRQ7

Quiz Start Time: 10:50 AM

Question # 7 of 10 (Start time: 10:54:08 AM)
Total Marks: 1
Threads can have function calls, parameters and _____ variables.
Select correct option:

- global

local Correct: Local

- legal
- illegal

Quiz Start Time: 10:50 AM

Question # 8 of 10 (Start time: 10:54:23 AM)
Total Marks: 1
In programmable interrupt controller which of the following ports is used for selectively enabling or disabling interrupts ?
Select correct option:

- 19
- 20

21Correct: 21

- 22

Quiz Start Time: 10:50 AM

Question # 9 of 10 (Start time: 10:54:56 AM)
Total Marks: 1
Programmable interrupt controller has two ports 20 and 21. Port 20 is the control port while port 21 is.....
Select correct option:

The Interrupt mask registerCorrect: Interrupt Mask Register

- Interrupt port
- Output port
- Inpuit port

Quiz Start Time: 10:50 AM

Question # 10 of 10 (Start time: 10:55:14 AM)
Total Marks: 1
When two devices in the system want to use the same IRQ line then what will happen?
Select correct option:

- A)An IRQ Collision

B)An IRQ ConflictCorrect:IRQ Conflict

- C)An IRQ Crash
- D)An IRQ Blockage

Quiz Start Time: 10:57 AM

Question # 1 of 10 (Start time: 10:57:39 AM)
Total Marks: 1
IRQ is referred to
Select correct option:

Eight input signalsCorrect:Eight input Singal

- One output signal
- Eight output signals
- One input signals

Quiz Start Time: 10:57 AM

Question # 2 of 10 (Start time: 10:58:01 AM)

Total Marks: 1
Which of the following IRQs is a cascading interrupt?
Select correct option:

- IRQ 0
- IRQ 1

IRQ 2 Correct:IRQ 2

- IRQ 3

Quiz Start Time: 10:57 AM

Question # 3 of 10 (Start time: 10:59:00 AM)
Total Marks: 1
Which of the following IRQs is used by the parallel port?
Select correct option:

- IRQ 4
- IRQ 5
- IRQ 6

IRQ 7Correct: IRQ 7

Quiz Start Time: 10:57 AM

Question # 4 of 10 (Start time: 10:59:40 AM)
Total Marks: 1
Programmable interrupt controller (PIC) has
Select correct option:

- One input signals and eight output signals
- One input signal and one output signal

Eight input signals and one output signalsCorrect: 8 input 1 output signal

- Eight input signals and eight output signals

Quiz Start Time: 10:57 AM

Question # 5 of 10 (Start time: 11:00:15 AM)
Total Marks: 1
Which of the following interrupt is of highest priority interrupt?
Select correct option:

- Key board interrupt

Timer interruptCorrect:Time Interrupts

- INT 2
- INT 3

Quiz Start Time: 10:57 AM

Question # 6 of 10 (Start time: 11:01:05 AM)
Total Marks: 1
The source registers in OUT is ?
Select correct option:

AL or AXCorrect: AL or AX

- BL or BX
- CL or CX
- DL or DX

Quiz Start Time: 10:57 AM

Question # 7 of 10 (Start time: 11:01:44 AM)
Total Marks: 1
Memory address space is selected when which of the following instructions is given to the processor?
Select correct option:

- MOV
- DEC

IN Correct:IN and OUT

- ADD

Quiz Start Time: 10:57 AM

Question # 8 of 10 (Start time: 11:02:28 AM)
Total Marks: 1
During the execution of an INT instruction some contents are pushed on to the stack the order of pushing them is
Select correct option:

- A)CS, IP and then FLAGS register
- B)IP, CS and then FLAGS register

C)FLAGS register, CS and then IPCorrect: Flag , CS , IP

- D)FLAGS register, IP and then CS

Quiz Start Time: 10:57 AM

Question # 9 of 10 (Start time: 11:03:21 AM)
Total Marks: 1
PCB stands for?
Select correct option:

Process Control BlockCorrect: Process Control Block

- Process Clearing Block
- Programable Counter Block
- Programs Control Block

Quiz Start Time: 10:57 AM

Question # 10 of 10 (Start time: 11:04:12 AM)
Total Marks: 1
The interrupt mask register which can be used for selectively enabling or disabling interrupts is associated with
Select correct option:

- Port 19
- Port 20

Port 21Correct: Port 21

- Port 22

==========

Set-28

sec(s)

Quiz Start Time: 07:30 AM

Question # 1 of 10 (Start time: 07:30:19 AM) **Total Marks:** 1

The destination registers in IN is ?

Select correct option:

- AL or AX
- BL or BX
- CL or CX
- DL or DX

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 85 sec(s)

Quiz Start Time: 07:30 AM

Question # 2 of 10 (Start time: 07:31:02 AM) **Total Marks:** 1

For the external hardware to generate an interrupt there are how many pins out side the processor?

Select correct option:

- 1
- 2
- 3

4

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 88 sec(s)

Quiz Start Time: 07:30 AM

Question # 3 of 10 (Start time: 07:31:38 AM) **Total Marks:** 1

From the following which is related to read a char from key board?

Select correct option:

- out al, 0x60
- in al, 0x60
- out dx, al
- ou dx, 0x378

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 88 sec(s)

Quiz Start Time: 07:30 AM

Question # 4 of 10 (Start time: 07:32:17 AM) **Total Marks:** 1

Programmable interrupt controller (PIC) has

Select correct option:

- One input signals and eight output signals

- One input signal and one output signal
- Eight input signals and one output signals
- Eight input signals and eight output signals

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 88 sec(s)

Quiz Start Time: 07:30 AM

Question # 5 of 10 (Start time: 07:33:06 AM) **Total Marks:** 1

The parallel port connector is called ?

Select correct option:

- DB-25
- BD-25
- DB-24
- BD-24

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 87 sec(s)

Quiz Start Time: 07:30 AM

Question # 6 of 10 (Start time: 07:33:40 AM) **Total Marks:** 1

Which of the following interrupts is used for Arithmetic overflow?

Select correct option:

- INT 1
- INT 2
- INT 3
- INT 4

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 88 sec(s)

Quiz Start Time: 07:30 AM

Question # 7 of 10 (Start time: 07:34:08 AM) **Total Marks:** 1

Memory address space is selected when which of the following instructions is given to the processor?

Select correct option:

- MOV
- DEC
- IN
- ADD

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 88 sec(s)

Quiz Start Time: 07:30 AM

Question # 8 of 10 (Start time: 07:34:51 AM) **Total Marks:** 1

The interrupt mask register which can be used for selectively enabling or disabling interrupts is associated with

Select correct option:

- Port 19
- Port 20
- Port 21
- Port 22

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 87 sec(s)

Quiz Start Time: 07:30 AM

Question # 9 of 10 (Start time: 07:35:30 AM) **Total Marks:** 1

Which of the following interrupts is used in debugging with the help of trap flag

Select correct option:

- INT 0
- INT 1
- INT 2

INT 3

Click here to Save Answer & Move to Next Question

BC100200001 : Fiza Perveen

Time Left 87 sec(s)

Quiz Start Time: 07:30 AM

Question # 10 of 10 (Start time: 07:36:12 AM) **Total Marks:** 1

Peripheral address space is selected when which of the following instructions is given to the processor?

Select correct option:

MOV

DEC

IN

ADD

Click here to Save Answer & Move to Next Question

==========

Set-29

MC100402092 : Muhammad Ishfaq

Time Left 80 sec(s)

Quiz Start Time: 06:31 PM

Question # 1 of 10 (Start time: 06:31:04 PM) **Total Marks:** 1

The maximum length of DOS command line parameters is

Select correct option:

- 64 bits
- 127 bits
- 256 bits
- 512 bits

Click here to Save Answer & Move to Next Question

MC100402092 : Muhammad Ishfaq

Time Left 84 sec(s)

Quiz Start Time: 06:31 PM

Question # 2 of 10 (Start time: 06:32:33 PM) **Total Marks:** 1

COM1 is connected with

Select correct option:

- IRQ2

IRQ3

IRQ4

IRQ5

Click here to Save Answer & Move to Next Question

MC100402092 : Muhammad Ishfaq

Time Left 80 sec(s)

Quiz Start Time: 06:31 PM

Question # 3 of 10 (Start time: 06:33:59 PM) **Total Marks:** 1

A FAT32 file system directory entry in DOS consist of how many bytes ?

Select correct option:

16

24

32 (CORRECT)

64

Click here to Save Answer & Move to Next Question

MC100402092 : Muhammad Ishfaq

Time Left 69 sec(s)

Quiz Start Time: 06:31 PM

Question # 4 of 10 (Start time: 06:34:16 PM) **Total Marks:** 1

Device drivers can be divided into ___ major categories:

Select correct option:

5

4

3

2 (CORRECT)

Click here to Save Answer & Move to Next Question

MC100402092 : Muhammad Ishfaq

Time Left 22 sec(s)

Quiz Start Time: 06:31 PM

Question # 5 of 10 (Start time: 06:35:43 PM) **Total Marks:** 1

Video service is categories into 3 types of service.

Select correct option:

- true
- false (CORRECT)

Click here to Save Answer & Move to Next Question

MC100402092 : Muhammad Ishfaq

Time Left 80 sec(s)

Quiz Start Time: 06:31 PM

Question # 7 of 10 (Start time: 06:37:33 PM) **Total Marks:** 1

In case of COM file, maximum length of parameters passed through command line can be ___

Select correct option:

- 63 bytes

127 bytes

255 bytes

511 bytes

Click here to Save Answer & Move to Next Question

MC100402092 : Muhammad Ishfaq

Time Left 81 sec(s)

Quiz Start Time: 06:31 PM

Question # 8 of 10 (Start time: 06:38:26 PM) **Total Marks:** 1

The 'program segment prefix' for com files is of size:

Select correct option:

64 bytes

128 bytes

256 bytes(Correct)

512 bytes

Click here to Save Answer & Move to Next Question

MC100402092 : Muhammad Ishfaq

Time Left 85 sec(s)

Quiz Start Time: 06:31 PM

Question # 9 of 10 (Start time: 06:39:59 PM) **Total Marks:** 1

The lower 16-bits of EAX register are labeled as:

Select correct option:

AX

EAL

AL (CORRECT)

None of the given options

Click here to Save Answer & Move to Next Question

MC100402092 : Muhammad Ishfaq

Time Left 39 sec(s)

Quiz Start Time: 06:31 PM

Question # 10 of 10 (Start time: 06:41:34 PM) **Total Marks:** 1

The INT 0x13 service 0x03 is use to

Select correct option:

- Read disk sector
- Write disk sector (CORRRECT)
- Reset disk sector
- Get drive parameter

Click here to Save Answer & Move to Next Question

Hard disk MBR(Master Boot Record) is of size

Select correct option:

446 bytes

Answer=446 bytes

350 bytes

512 bytes

256 bytes

Click here to Save Answer & Move to Next Question

A FAT32 file system directory entry in DOS consist of how many bytes ?

Select correct option:

16

24

32 (CORRECT)

64

Click here to Save Answer & Move to Next Question

A 32-bit address register can access up to ____ of memory.

Select correct option:

2 MB

2 GB

4 MB

4 GB

Click here to Save Answer & Move to Next Question

Operating system Organize data in the form of

Select correct option:

Folder

Batch file

- File
- None of the above

Click here to Save Answer & Move to Next Question

In the context of video services, if we want to get text mode chargen then which of the value place in AX.

Select correct option:

- 1110h
- 1010h
- 0011h
- 0001h

Video write string page number place in which of the register

Select correct option:

- AH

- BL
- CL
- none of the above (cORRECT)

Click here to Save Answer & Move to Next Question

The video services are exported via

Select correct option:

- INT10 (CORRECT
- INT9
- INT8
- INT7

Click here to Save Answer & Move to Next Question

In 9pin DB 9 connector, which pin is assigned to Signal Ground ?

Select correct option:

- 3
- 4
- 5
- 6

Click here to Save Answer & Move to Next Question

COM1 is connected with

Select correct option:

- IRQ2
- IRQ3
- IRQ4

IRQ5

==========

Set-30

Question # 7 of 10 (Start time: 11:45:41 PM)

On executing INT 0x21--service 0x3D, if file can't be opened then

Select correct option:

- CF will contain 1
- CF will contain 0
- ZF will contain 1
- ZF will contain 0

Question # 8 of 10 (Start time: 11:46:47 PM)

In case of COM file, maximum length of parameters passed through command line can be ___

Select correct option:

- 63 bytes
- 127 bytes
- 255 bytes
- 511 bytes

Quiz - Windows Internet Explorer

http://quiz.vu.edu.pk/QuizQuestion.as

MC100203484 : Suleman Shah

Quiz Start Time: 11:43 PM

Question # 9 of 10 (Start time: 11:46:5

Operating system Organize data in the form of

Select correct option:

- Folder
- Batch file
- File
- None of the above

Question # 10 of 10 (

COM1 is connected with

Select correct option:

- IRQ2
- IRQ3
- IRQ4
- IRQ5

Question # 6 of 10 (Start time: 11:45:0

The 'program segment prefix' is used to store:

Select correct option:

- (selected) DOS information
- Command tail
- DOS information and Command tail
- None of the given options

Question # 5 of 10 (Start time: 11:44:32 PM)

Which of the following BIOS INT provides serial port services

Select correct option:

- INT 21
- (selected) INT 14
- INT 10
- INT 08

Question # 4 of 10 (Start time: 11:44:21 PM)

A 32-bit address register can access up to ____ of memory.

Select correct option:

- 2 MB
- 2 GB
- 4 MB
- 4 GB

Question # 3 of 10 (Start time: 11:43:

We can access all the DOS services using

Select correct option:

- INT 0x21
- INT 0x13
- INT 0x10
- INT 0x08

Question # 2 of 10 (Start time: 11:43:21 PM)

In 9pin DB 9 connector, which pin is assigned to Signal Ground ?

Select correct option:

- 3
- 4
- 5
- 6

Question # 1 of 10 (Start time: 1

The video services are exported via

Select correct option:

- INT10
- INT9
- INT8
- INT7

==========

Set-31

Question # 1 of 10 Total Marks: 1
When two devices in the system want to use the same IRQ line then what will happen?
Select correct option:

- **An IRQ Conflict**
- An IRQ Crash
- An IRQ Collision
- An IRQ Blockage

Question # 2 of 10 Total Marks: 1
Hard disk MBR(Master Boot Record) is of size_____.
Select correct option:

- **446 bytes**
- 350 bytes
- 512 bytes
- 256 bytes

Question # 3 of 10 Total Marks: 1
Which of the following IRQs is connected to serial port COM 2?
Select correct option:

- IRQ 0
- IRQ 1
- IRQ 2
- **IRQ 3**

Question # 4 of 10 Total Marks: 1
The first sector on hard disk contains the
Select correct option:

- Hard disk size
- **Partition table**
- Data size
- Sector size

Question # 5 of 10 Total Marks: 1
In programmable interrupt controller which of the following ports is referred as a control port?
Select correct option:

- 19
- **20**
- 21
- 22

Question # 6 of 10 Total Marks: 1
Which of the following IRQs is used by the parallel port?
Select correct option:
IRQ 4
IRQ 5
IRQ 6

IRQ 7
Question # 7 of 10 Total Marks: 1
The programmable interval timer (PIT) has input frequency of
Select correct option:

- **1.193MHZ**
- 2.193MHZ
- 3.193MHZ
- 4.193MHZ

Question # 8 of 10 Total Marks: 1
CX register mostly use a
Select correct option:
Counter register

Flag register
Base register
Desination register
Question # 9 of 10 Total Marks: 1
The input frequency of the programmable interval timer (PIT) is
Select correct option:

- **Fixed**
- Depends on processor clock
- Variable
- Depends on hardware attached

Question # 10 of 10 Total Marks: 1
The thread registration code initializes the PCB and adds it to the linked list so that the _____ will give it a turn.
Select correct option:

- Assembler
- **Scheduler**
- Linker
- Debugger

Question # 1 of 10 Total Marks: 1
INT13 --BIOS disk services" generally uses which register to return the 'error code' ?
Select correct option:

- **CF**
- DL
- AH
- AL

Question # 2 of 10 Total Marks: 1
Operating system Organize data in the form of
Select correct option:

- Folder
- Batch file
- **File**
- None of the above

Question # 3 of 10 Total Marks: 1

___ decrements SP (the stack pointer) by two and then transfers a word from the source operand to the top of stack now pointed to by SP.
Select correct option:

- **PUSH**
- POP
- CALL
- MOV

Question # 4 of 10 Total Marks: 1
Which of the following interrupts is Non maskable interrupt?
Select correct option:

- INT 0
- INT I
- **INT 2**

- INT 3

Question # 5 of 10 Total Marks: 1
The maximum parameters a subroutine can receive are_____ when all the general registers
are used.
Select correct option:

- 6
- **7**
- 5
- 4

Question # 6 of 10 Total Marks: 1
When the operand of DIV instruction is of 16-bits then implied dividend will be stored in_____
Select correct option:

- AX register
- The concatenation of DX and AX
- The concatenation of ES and AX
- The concatenation of DS and BX

Question # 7 of 10 Total Marks: 1
COM2 is connected with
Select correct option:

- IRQ 2
- IRQ **3**
- IRQ 4
- IRQ 5

Question # 8 of 10 Total Marks: 1
The parallel port connector is called?
Select correct option:

- BD-24
- BD-25
- **DB-25**
- DB-24

Question # 9 of 10 Total Marks: 1
The instruction to call any software interrupt is
Select correct option:

- GO INT interrupt_number
- Call interrupt_number
- **INT interrupt_number**
- Call INT interrupt_number

Question # 10 of 10 Total Marks: 1
The INT 0x13 service 0x03 is use to
Select correct option:

- Get drive parameter
- Reset disk sector
- **Write disk sector**
- Read disk sector

Question # 1 of 10 Total Marks: 1
Data bus is
Select correct option:
- Uni-directional
- **Bi-directional**
- Non-directional
- None of the given

Question # 2 of 10 Total Marks: 1
PUSH increments SP (the stack pointer) by two and then transfers a word from the source
operand to the top of stack now pointed to by SP.
Select correct option:
- True
- **False**

Question # 3 of 10 Total Marks: 1
Peripheral address space is selected when which of the following instructions is given to the
processor?
Select correct option:
- MOV
- DEC
- **IN**
- ADD

Question # 4 of 10 Total Marks: 1
Creation of threads can be
Select correct option:
- Static
- Dynamic
- **Both**
- None of the above

Question # 5 of 10 Total Marks: 1
Which of the following IRQs is used by the parallel port?
Select correct option:
IRQ 4
5
6
7

Question # 6 of 10 Total Marks: 1
Priority of IRQ 0 interrupt is
Select correct option:
- **Highest**
- low
- medium
- None of the above

Question # 7 of 10 Total Marks: 1
The number of pins in a parallel port connector are?
Select correct option:

- 20
- **25**
- 30
- 35

Question # 8 of 10 Total Marks: 1
The interrupt call loads new values in CS, IP and
Select correct option:

- DS
- SS
- **FLAG**
- Bookmark

Question # 9 of 10 Total Marks: 1
All the registers and stacks are saved in
Select correct option:

- **Multitasking**
- Multi Processing
- Function Call
- BIOS

Question # 10 of 10 Total Marks: 1
In 9 pin DB connector ,which pin is assigned to TD.
Select correct option:
12**3**4

1. Assembly language is not a low level language.
   - True
   - **False**
2. In case of COM File first command parameter is stored at _____ offset of program segment prefix.
   - **0x80 (Not Confirm)**
   - 0x82
   - 0x84
   - 0x86
3. Address always goes from
   - Processor to meory
   - **Memory to processor**
   - Memory to memory
   - None of the above
4. The source register in OUT is
   - **AL or AX**
   - BL or BX
   - CL or CX
   - DL or DX
5. By default CS is associated with
   - SS
   - BP
   - CX
   - **IP**

6. Which of the following pins of parallel port are grounded
- 10-18
- **b. 18-25**
- c. 25-32

d. 32-39

7. In the instruction mov word [es:160], 0x1230, 30 represents the character
- A
- B
- **0**
- 1

8. On executing 0x21 0x3D, if file cant be opened then
- **CF will contain 1**
- CF will contain 0
- ZF will contain 1
- ZF will contain 0

9. Which of the following IRQ is cascading interrupt
- IRQ 0
- IRQ 1
- **IRQ 2**
- IRQ 3

10. The execution of instruction mov word [es:160], 0x1230, will print a character on the screen at
- **First column of second row**
- Second column of first row
- Second column of second row
- First column of third row

Question No: 1 (Marks: 1) - Please choose one
To transfer control back the RET instruction take
- **1 argument**
- 1 argument
- 3 arguments
- No arguments

Question No: 2 (Marks: 1) - Please choose one
In STOSB instruction SI is decremented or incremented by
4**1**23

Question No: 3 (Marks: 1) - Please choose one
CMPS instruction subtracts the source location _____from the destination location.
- **DS:SI**
- DS:DI
- ES:SI
- ES:DI

Question No: 4 (Marks: 1) - Please choose one
Regarding assembler, which statement is true:
Assembler converts mnemonics to the corresponding OPCODE
Assembler converts OPCODE to the corresponding mnemonics

Assembler executes the assembly code all at once
Assembler executes the assembly code step by step
Question No: 5 (Marks: 1) - Please choose one
If "BB" is the OPCODE of the instruction which states to "move a constant value to AX register", the hexadecimal representation (Using little Endian notation) of the instruction "Mov
AX,336" ("150" in hexadecimal number system) will be:

- **0xBB0150**
- 0x5001BB
- 0x01BB50
- 0xBB5001

Question No: 6 (Marks: 1) - Please choose one
In the instruction MOV AX, 5 the number of operands are

- **1**
- 2
- 3
- 4

Question No: 7 (Marks: 1) - Please choose one
The maximum parameters a subroutine can receive (with the help of registers) are

- 6
- **7**
- 8
- 9

Question No: 8 (Marks: 1) - Please choose one
In assembly the CX register is used normally as a _____register.

- source
- **counter**
- index
- pointer

Question No: 9 (Marks: 1) - Please choose one
All the addressing mechanisms in iAPX 8 8 return a number called _ _ _ _ _ _ _ _ _ _ _ _ _ address .

- **effective**
- faulty
- indirect
- direct

Question No: 10 (Marks: 1) - Please choose one
When a 16 bit number is divided by an 8 bit number, the dividend will be in

- **AX**
- BX
- CX
- DX

Question No: 11 (Marks: 1) - Please choose one
in Left-Shift-Operation the left most bit _____

- **will drop**
- will go into CF
- Will come to the right most
- will be always 1

Question No: 12 (Marks: 1) - Please choose one
Suppose the decimal number "35" after shifting its binary two bits to left, the new value becomes _____

- 35
- 70
- **140**
- 17

Question No: 13 (Marks: 1) - Please choose one
When divide overflow occurs processor will be interrupted this type of interrupt is called

- Hardware interrupt
- Software interrupt
- **Processor exception**
- Logical interrupts

Question No: 14 (Marks: 1) - Please choose one
Which mathematical operation is dominant during the execution of SCAS instruction
· Division
· Multiplication
· Addition
· **Subtraction**
Question No: 15 (Marks: 1) - Please choose one

After the execution of REP instruction CX will be decremented then which of the following flags will be affected?
· CF
· OF
· **DF**
· No flags will be affected
Question No: 16 (Marks: 1) - Please choose one
_____ is one of the reasons due to which string instructions are used in 8088
· Efficiency and accuracy
· Reduction in code size and accuracy
· **Reduction in code size and speed**
· Reduction in code size and efficiency
Question No: 1 (Marks: 1) - Please choose one
The physical address of the stack is obtained by
► SS:SI combination
► **SS:SP combination**
► ES:BP combination
► ES:SP combination
Question No: 2 (Marks: 1) - Please choose one
After the execution of instruction “RET ”
► **SP is incremented by 2**
► SP is decremented by 2
► SP is incremented by 1
► SP is decremented by 1
Question No: 3 (Marks: 1) - Please choose one
The second byte in the word designated for one screen location holds
► The dimensions of the screen
► Character position on the screen

► **Character color on the screen**
► ASCII code of the character
Question No: 4 (Marks: 1) - Please choose one
REP will always
► Increment CX by 1
► Increment CX by 2
► **Decrement CX by 1**
► Decrement CX by 2
Question No: 5 (Marks: 1) - Please choose one
The basic function of SCAS instruction is to
► **Compare**
► Scan
► Sort
► Move data
Question No: 6 (Marks: 1) - Please choose one
Index registers are used to store _____
► Data

► Intermediate result
► **Address**
► Both data and addresses
Question No: 7 (Marks: 1) - Please choose one
The bits of the _____ work independently and individually
► index register
► base register
► **flags register**
► accumulator
Question No: 8 (Marks: 1) - Please choose one
To convert any digit to its ASCII representation
► **Add 0x30 in the digit**
► Subtract 0x30 from the digit
► Add 0x61 in the digit
► Subtract 0x61 from the digit
Question No: 9 (Marks: 1) - Please choose one
When a 32 bit number is divided by a 16 bit number, the quotient is of
► 32 bits
► 16 bits
► 8 bits
► **4 bits**
Question No: 10 (Marks: 1) - Please choose one
When a 16 bit number is divided by an 8 bit number, the quotient will be in
► AX
► **AL**
► AH
► DX
Question No: 11 (Marks: 1) - Please choose one
Which mathematical operation is dominant during the execution of SCAS instruction
► Division
► Multiplication

► Addition
► **Subtraction**
Question No: 12 (Marks: 1) - Please choose one
If AX contains decimal -2 and BX contains decimal 2 then after the execution of instructions:
CMP AX, BX JA label
► Jump will be taken
► **Zero flag will set**
► ZF will contain value -4
► Jump will not be taken
Question No: 13 (Marks: 1) - Please choose one
The execution of the instruction "mov word [ES : 160], 0x1230" will print a character "0" on
the screen at
► Second column of first row
► **First column of second row**
► Second column of second row

► First column of third row
Question No: 14 (Marks: 1) - Please choose one
If the direction of the processing of a string is from higher addresses towards lower addresses
then
► ZF is cleared
► **DF is cleared**
► ZF is set
► DF is set
Question No: 15 (Marks: 1) - Please choose one
The instruction ADC has_____ Operand(s)
► 0
► 1
► 2
► **3**
Question No: 16 (Marks: 1) - Please choose one
Which bit of the attributes byte represents the red component of background color ?
► **3**
► 4
► 5
► 6
Q=1:
Which bit of attributes byte represents the blue component of foreground color?
0
· 1
· 2
· 3
Q=2:
The clear screen operation initializes the whole block of video memory to:
· 0417
· 0714

· 0741
· **0720**
Q=3:
When the operand of DIV instruction is of 16 bit then implied dividend will be of
· 64-bit
· **32-bits**
· 16-bits
· 8--bits
Q=4
Which of the following is the pair of register used to access memory in string instruction:
· DI and BP
· SI and BP
· **DI and SI**
· DS and Si

Q=5
A fat32 file system directory entry in DOS consist of how many bytes?
· 16
· 24
· **32**
· 64
Q=6:
Which register is generally used to specify the services number of an interrupt?
DX
AX
BX
CX
……
Q=7:
In 9 pin db 9 connector ,which pin is assigned to RD(received data)
· 1
· **2**
· 3
· 4
Q=8
In case of COM file, maximum length of parameters passed through command line can be…….
· 63 bytes
· 127bytes
· 255 bytes
· 511 bytes
Q=9
We can access the DOS service using;
· **Int 0x21**
· Int 0x13
· Int 0x 10
· Int 0x 08
Q=10
In 9 pin 9 connector,which pin is assigned to signal ground

· 3
· 4
· **5**
· 6
Q=11:
BPB stands for
· Basic parameter block
· Bios precise block
· Basic precise block
· **Bios parameter block**

Q=12
Int 13-bios disk service "generally uses which register to return the error flag?
· CF
· DL
· **AH**
· AL
Q=13:
The first sector on the hard disk contains the
· Hard disk size
· **Partition table**
· Data size
· Sector size
Q=14
Operating system organize data in the form of
· Folder
· Batch file
· **File**
· None of above
……
Q=15
In 9 pin db 9 connector, which pin is assigned to TD(transmitted data)
· 1
· 2
· **3**
· 4
Q=16"
Device derive can be divided into ----------major categories.
· 5
· 4
· 3
· 2
1. BL contains 5 decimal then after right shift , BL will become
· 3
· **2.5**
· 5
· 10
2. 8 * 16 font is stored in _____ bytes.
· 3

· 4
· 8
· **16**
3. In DOS input buffer , number of characters actually read on return is stored in
· First byte
· ***Second byte***
· Third byte
· Fourth byte
4. IRQ 0 has priority
· Low
· High
· ***Highest***
· Medium
5. Thread registration code initialize PCB and add to linked list so that _____ will give it turn.
· Assembler
· Linker
· ***Scheduler***
· Debugger
6. Traditional calling conventions are in _____ number
· 1
· **2**
· 3
· 4
7. VESA VEB 2.0 is standard for
· ***High Resolution Mode***
· Low Resolution Mode
· Very High Resolution Mode
· Medium Resolution Mode
8. To clear direction flag which instruction is used
· ***Cld***
· Clrd
· Cl df
· Clr df
9. In STOSW instruction , When DI is cleared , SI is
· Incremented by 1
· ***Incremented by 2***
· Decremented by 1
· Decremented by 2
10. Interrupt that is used in debugging with help of trap flag is

· INT 0
· ***INT 1***
· INT 2
· INT 3
11. INT for arithmetic overflow is
· INT 1

· INT 2
· INT 3
· ***INT 4***
12. IRQ referred as
· ***Eight Input signals***
· One Input signal
· Eight Output signals
· One output signal
13. IRQ for keyboard is ____***1***_____
14. IRQ for sound card is _____***5***_____
15. IRQ for floppy disk is _____***6***_____
16. IRQ with highest priority is
· Keyboard IRQ
· ***Timer IRQ***
· Sound Card
· Floppy Disk
17. Pin for parallel port ground is
· 10-18
· ***18-25***
· 25-32
· 32-39
18. The physical address of Interrupt Descriptor Table (IDT) is stored in
· GDTR
· ***IDTR***
· IVT
· IDTT
19. Execution of "RET 2" results in?
20. CX register is
· ***Count register***
· Data register
· Index register
· Base register

21. OUT instruction uses __**AX**_____ as source register.
22. IN DB-9 connector the Data Set ready pin is at
· 5
· ***6***
· 7
· 8
23. If two devices uses same IRQ then there is
· IRQ collision
· ***IRQ conflict***
· IRQ drop
24. VESA organizes 16 bit color for every pixel in ratio
· 5:5:5
· ***5:6:5***
· 6:5:6
· 5:6:7
25. Division by zero is done by which interrupt.

Interrupt 0.

.....

Question No: 1 (Marks: 1) - Please choose one

After the execution of SAR instruction

► **The msb is replaced by a 0**

► The msb is replaced by 1

► The msb retains its original value

► The msb is replaced by the value of CF

Question No: 2 (Marks: 1) - Please choose one

RETF will pop the offset in the

► BP

► **IP**

► SP

► SI

Question No: 3 (Marks: 1) - Please choose one

The routine that executes in response to an INT instruction is called

► **ISR**

► IRS

► ISP

► IRT

Question No: 4 (Marks: 1) - Please choose one

The first instruction of "COM" file must be at offset:

► 0x0010

► **0x0100**

► 0x1000

► 0x0000

Question No: 5 (Marks: 1) - Please choose one

"Far" jump is not position relative but is _____

► memory dependent

► **Absolute**

► temporary

► indirect

Question No: 6 (Marks: 1) - Please choose one

Only _____ instructions allow moving data from memory to memory.

► **string**

► word

► indirect

► stack

Question No: 7 (Marks: 1) - Please choose one

After the execution of instruction "RET 2"

► **SP is incremented by 2**

► SP is decremented by 2

► SP is incremented by 4

► SP is decremented by 4

Question No: 8 (Marks: 1) - Please choose one

DIV instruction has

► **Two forms**

► Three forms
► Four forms
► Five forms

Question No: 9 (Marks: 1) - Please choose one

When the operand of DIV instruction is of 16 bits then implied dividend will be of
► 8 bits
► 16 bits
► **32 bits**
► 64 bits

Question No: 10 (Marks: 1) - Please choose one

After the execution of MOVS instruction which of the following registers are updated
► SI only
► DI only
► **SI and DI only**
► SI, DI and BP only

Question No: 11 (Marks: 1) - Please choose one

In 8088 architecture, whenever an element is pushed on the stack
► SP is decremented by 1
► **SP is decremented by 2**
► SP is decremented by 3
► SP is decremented by 4

Question No: 12 (Marks: 1) - Please choose one

When a very large number is divided by very small number so that the quotient is larger than
the space provided, this is called
► Divide logical error
► **Divide overflow error**
► Divide syntax error
► An illegal instruction

Question No: 13 (Marks: 1) - Please choose one

In the word designated for one screen location, the higher address contains
► **The character code**
► The attribute byte
► The parameters
► The dimensions

Question No: 14 (Marks: 1) - Please choose one

Which of the following options contain the set of instructions to open a window to the video
memory?
► mov AX, 0xb008
mov ES, AX
► **mov AX, 0xb800**
mov ES, AX
► mov AX, 0x8b00
mov ES, AX
► mov AX, 0x800b
mov ES, AX

Question No: 15 (Marks: 1) - Please choose one
In a video memory, each screen location corresponds to
► One byte
► **Two bytes**
► Four bytes
► Eight bytes
Question No: 16 (Marks: 1) - Please choose one
The execution of the instruction "mov word [ES : 0], 0x0741" will print character "A" on screen , background color of the screen will be
► **Black**
► White
► Red
► Blue
Question No: 1 ___(Marks: 1) - Please choose one
Which of the following is not true about registers?
· Their operation is very much like memory
· Intermediate results may also be stored in registers.
· They are also called scratch pad ram
· **None of given options.**
Question No: 2 ___(Marks: 1) - Please choose one
move [bp], al moves the one byte content of the AL register to the address contained in BP register in the current

· Stack segment
· **Code segment**
· Data segment
· Extra segment
Question No: 3 (Marks: 1) - Please choose one
In a rotate through carry right (RCR) instruction applied on a 16 bit word
Effectively there is
· 16 bits rotation
· 1 bit rotation
· 17 bits rotation
· 8 bits rotation
Question No: 4__ (Marks: 1) - Please
choose one The 8088 stack works on
· **Word sized elements**
· Byte sized elements
· Double sized element
· Nible sized element
Question No: 5 (Marks: 1) - Please
choose one
An 8 x 16 font is stored in.....Bytes
· 2
· 4
· 8
· **16**
Question No: 6 (Marks: 1) - Please
INT 10 is used for.....services.

· RAM
· Disk
· **BIOS video**
· DOS video
Question No: 7 __ (Marks: 1) - Please choose one
Priority of IRQ 0 interrupt is
· medium
· high
· **highest**
· low
Question No: 8 __ (Marks: 1) - Please choose one

Threads can have function calls, parameters and _____variables.
· global
· **local**
· legal
· illegal
Question No: 9 __ (Marks: 1) - Please choose
one How many prevalent calling conventions do.....exist
· 1
· **2**
· 3
· 4
VERY IMPORTANT
Question No: 10 (Marks: 1) - Please choose
one In 9pin DB 9 DSR is assigned on pin number
· 4
· 5
· **6**
· 7
Question No: 11
(Marks: 1) - Please
choose one In 9pin DB 9 CTS is assigned on pin
number
· 6
· 7
· **8**
· 9
Question No: 12__ (Marks: 1) - Please choose one
In 9pin DB 9 CD is assigned on pin number
· **1**
· 2
· 3
· 4
Question No: 13__ (Marks: 1) - Please choose one
In 9pin DB 9 RD is assigned on pin number
· 1
· **2**
· 3

· 4

Question No: 14 __ (Marks: 1) - Please choose one

in device attribute word which of the following bit decides whether it is a cha rater

· device or a block device
· Bit 12 Bit 13
· Bit 14
· **Bit 15**

Question No: 15__ (Marks: 1) - Please choose one

Video services are classified into _____broad categories

· **2**
· 3
· 4
· 5

Question No: 16 (Marks: 1) - Please choose

one In STOSB instruction, when DF is clear, SI
is

· **Incremented by 1**
· Incremented by 2
· Decremented by 1
· Decremented by 2

Question No: 17 (Marks: 1) - Please choose one The

process of sending signals back and forth is called

· Activity
· Hand-shaking
· **Interruption**
· Time clicking

Question No: 18 (Marks: 1) - Please choose one

which of the following is a special type of interrupt that returns to the
same instruction instead of the next instruction

· **Divide overflow interrupt**
· Debug interrupt
· Arithmetic overflow interrupt
· Change of sign interrupt

Question No: 19 ___(Marks: 1) - Please choose one

Which of the following IRQs is derived by a timer device?

· **IRQ 0**
· IRQ 1
· IRQ 2
· IRQ 3

Question No: 20 __ (Marks: 1) - Please choose one

Which of the following interrupts is used for Arithmetic overflow

· INT 1
· INT 2
· INT 3

· **INT 4**

Question No: 21 __ (Marks: 1) - Please choose one

Which of the following IRQs is connected to serial port COM 2?
· IRQ 0
· IRQ 1
· IRQ 2
· **IRQ 3**
Question No: 22 __ (Marks: 1) - Please
choose one
An End of Interrupt (EOI) signal is sent by
· **Handler**
· Processor
· IRQ
· PIC
Question No: 23 __ (Marks: 1) - Please choose one
The source registers in OUT is
· **AL or AX**
· BL or BX
· CL or CX
· DL or DX
Question No: 24 (Marks: 1) - Please choose one
In programmable interrupt controller which of the following ports is used for selectively enabling or disabling interrupts
· 19
· 20
· **21**
· 22
Question No: 25 (Marks: 1) - Please choose one
The number of pins in a parallel port connector
are?
· 25
· 30
· 35
· 45
Question No: 26 (Marks: 1) - Please choose one
Which of the following pins of a parallel port connector are grounded?
· 10-18
· 18-25
· 25-32
· 32-39
Question No: 27 __ (Marks: 1) - Please choose one
Suppose a decimal number 35 when its binary is shifted to write two places the

new number will become
· 35
· 70
· 140
· 17
Question No: 28 __ (Marks: 1) - Please choose one
A 32bit address register can access upto .....of memory so memory access has increased a lot.

· 2GB
· 4GB
· 6GB
· 8GB

Question No: 29 __ (Marks: 1) - Please choose one

In NASM an imported symbol is declared with the .....while and exported
symbol is declared with the .....

· Global directive, External directive
· External directive, Global directive
· Home Directive, Foreign Directive
· Foreign Directive, Home Directive

Question No: 30 (Marks: 1) - Please choose

one Single step interrupt is

Question No: 1 (Marks: 1)

- Please choose one

Sun SPARC Processor has a fixed _____ instruction size.

· 16bit
· **32bit**
· 64bit
· 20bit

Question No: 2 (Marks: 1)

- Please choose one

When the subprogram finishes, the _____ retrieves the return address from
the stack and transfers control to that location.

· **RET instruction**
· CALL instruction
· POP instruction
· Jump instruction

Question No: 3 (Marks: 1)

- Please choose one

A 32 bit address register can access upto _____ of memory.

· 1 GB
· 6 GB
· **4 GB**
· 2 GB

Question No: 4 (Marks: 1)

- Please choose one

The value of a segment register when the processor is running under protected mode is called

· **segment descriptor**
· segment selector
· global descriptor table
· protected register

Question No: 5 (Marks: 1)

- Please choose one

FS and GS are two _____ in protected mode.

· **segment registers**
· segment selectors
· stack pointers
· register pointers
Question No: 6 (Marks: 1)
- Please choose one
IRQ 0 interrupt have _____ priority
· low
· medium
· **highest**
· lowest
Question No: 7 (Marks: 1)
- Please choose one
IDT stands for _____.
· interrupt descriptor table
· individual descriptor table
· inline data table
· **interrupt descriptor table**
Question No: 8 (Marks: 1)
- Please choose one
Every bit of line status in serial port conveys _____ information.
· **different**
· same
· partial
· full
Question No: 9 (Marks: 1)
- Please choose one

There are total _____ bytes in a standard floppy disk.
· 1444k
· **1440k**
· 1280k
· 2480k
Question No: 10 (Marks: 1)
- Please choose one
An 8x16 font is stored in _____ bytes.
· 8
· **16**
· 4
· 20
==========
. Serial Port is also accessible via ***I/O*** ports **, COM 1** is accessible via ports 3F8-3FF while ***COM 2*** is accessible via 2F8 -2FF.
The first register at 3F8 is the ***Transmitter*** holding register if written to and the receiver ***buffer*** register if read from.
Other register of our interest include 3F9 whose ***Bit 0*** must be set to enable received data
available interrupt and ***Bit 1*** must be set to enable transmitter holding register empty interrupt.

(Transmitter, COM 1, I/O ports , COM2. bit 0 , Buffer , 3FA)
==========
Question # 1
There are three busses to communicate the processor and memory named as _____
1) : address bus.,data bus and data bus.
2) : addressing bus.,data bus and data bus.
3) : address bus.,datamove bus and data bus.
4) : **address bus.,data bus and control bus..**
Question # 2
The address bus is unidirectional and address always travels from processor to memory.
1**) : TRUE**
2) : FALSE
Question # 3
Data bus is bidirectional because_____
1) : To way
2) : Data moves from both, processor to memory and memory to processor,
3) : **Data moves from both, processor to memory and memory to data Bus,**
4) : None of the Given
Correct Option : 3 From : Lecture 1
Question # 4

Control bus_____
1) : is Not Important.
2) : is Important .
3) : **bidirectional.**
4) : unidirectional .
Correct Option : 3 From : Lecture 1
Question # 5
A memory cell is an n-bit location to store data, normally _____also called a byte
1) : 4-bit
2) : **8-bit**
3) : 6-bit
4) : 80-bit
Correct Option : 2 From : Lecture 1
Question # 6
The number of bits in a cell is called the cell width._____ define the memory completely.
1) : **Cell width and number of cells,**
2) : cell number and width of the cells,
3) : width
4) : Height
Correct Option : 1 From : Lecture 1
Question # 7
for memory we define two dimensions. The first dimension defines how many _____bits are there in a single memory cell.
1) : **parallel**
2) : Vertical
3) : long

4) : short
Correct Option : 1 From : Lecture 1
Question # 8
_____ operation requires the same size of data bus and memory cell width.
1) : Normal
2) : **Best and simplest**
3) : first
4) : None of the Given
Correct Option : 2 From : Lecture 1
Question # 9
Control bus is only the mechanism. The responsibility of sending the appropriate signals on
the control bus to the memory is of the_____.
1) : Data Bus
2) : **processor**
3) : Address Bus
4) : None of the Given
Correct Option : 2 From : Lecture 1
Question # 10
In "total: dw 0 " Opcode total is a _____
1) : Literal

2) : Variable
3) : **Label**
4) : Starting point
Correct Option : 3 From : Lecture 10
Question # 11
| 0 |--›| 1 | 1 | 0 | 1 | 0 | 0 | 0 | --›| C | is a example of _____
1) : Shl
2) : sar
3) : **Shr**
4) : Sal
Correct Option : 3 From : Lecture 10
Question # 12
| C |‹--| 1 | 1 | 0 | 1 | 0 | 0 | 0 | ‹--| 0 | is a example of _____
1) : **Shl**
2) : sar
3) : Shr
4) : Sal
Correct Option : 1 From : Lecture 10
Question # 13
ADC has _____ operands.
1) : two
2) : **three**
3) : Five
4) : Zero
Correct Option : 2 From : Lecture 10
Question # 14
The basic purpose of a computer is to perform operations, and operations need

_____.
1) : order
2) : nothing
3) : **operands**
4) : bit
Correct Option : 3 From : Lecture 2
Question # 15
Registers are like a scratch pad ram inside the processor and their operation is very much like
normal_____.
1) : Number
2) : opreations
3) : **memory cells**
4) : None of the Given
Correct Option : 3 From : Lecture 2
Question # 16
There is a central register in every processor called the _____ and The word size of a processor is defined by the width of its_____.
1) : **accumulator,accumulator**
2) : data bus,accumulator
3) : accumulator, Address Bus

4) : accumulator,memory
Correct Option : 1 From : Lecture 2
Question # 17
_____does not hold data but holds the address of data
1) : Pointer, Segment, or Base Register
2) : **Pointer, Index, or Base Register**
3) : General Registers
4) : Instruction Pointer
Correct Option : 2 From : Lecture 2
Question # 18
"The program counter holds the address of the next instruction to be _____"
1) : **executed.**
2) : called
3) : deleted
4) : copy
Correct Option : 1 From : Lecture 2
Question # 19
There are _____ types of "instruction groups"
1) : **4**
2) : 5
3) : 3
4) : 2
Correct Option : 1 From : Lecture 2
Question # 20
These instructions are used to move data from one place to another.
1) : **TRUE**
2) : FALSE

3) :
4) :
Correct Option : 1 From : Lecture 2
Question # 21
"mov" instruction is related to the _____ *****.
1) : Arithmetic and Logic Instructions
2) : **Data Movement Instructions**
3) : Program Control Instructions
4) : Special Instructions
Correct Option : 2 From : Lecture 2
Question # 22
_____allow changing specific processor behaviors and are used to play with it.
1) : **Special Instructions**
2) : Data Movement Instructions
3) : Program Control Instructions
4) : Arithmetic and Logic Instructions
Correct Option : 1 From : Lecture 2
Question # 23
8088 is a 16bit processor with its accumulator and all registers of _____.

1) : 32 bits
2) : 6 bits
3) : **16 bits**
4) : 64 bits
Correct Option : 3 From : Lecture 2
Question # 24
The _____ of a processor means the organization and functionalities of the registers it
contains and the instructions that are valid on the processor.
1) : Manufactures
2) : **architecture**
3) : Deal
4) : None of the Given
Correct Option : 2 From : Lecture 2
Question # 25
Intel IAPX88 Architecture is _____
1) :**More then 25 old**
2) : New
3) : Not Good
4) : None of the Given
Correct Option : 1 From : Lecture 2
Question # 26
The iAPX88 architecture consists of_____registers.
1) : 13
2) : 12
3) : 9
4) : 14
Correct Option : 4 From : Lecture 3
Question # 27

General Registers are _____
1) : AX, BX, CX, and DX
2) : XA, BX, CX, and DX
3) : SS,SI and DI
4) : 3
Correct Option : 1 From : Lecture 3
Question # 28
AX means we are referring to the extended 16bit "A" register. Its upper and lower byte are separately accessible as _____.
1) : **AH and AL**
2) : A Lower and A Upper
3) : AL, AU
4) : AX
Correct Option : 1 From : Lecture 3
Question # 29
AX is General purpose Register where A stands for_____.
1) : Acadmic
2) : Ado
3) : Architecture

4) : **Accumulator**
Correct Option : 4 From : Lecture 3
Question # 30
The B of BX stands for _____because of its role in memory addressing.
1) : Busy
2) : **Base**
3) : Better
4) : None of the Given
Correct Option : 2 From : Lecture 3
Question # 31
The D of DX stands for Destination as it acts as the destination in _____.
1) : **I/O operations**
2) : operations
3) : memory cells
4) : Memory I/O operations
Correct Option : 1 From : Lecture 3
Question # 32
The C of CX stands for Counter as there are certain instructions that work with an automatic
count in the _____.
1) : DI register
2) : BX register
3) : **CX register**
4) : DX register
Correct Option : 3 From : Lecture 3
Question # 33
_____are the index registers of the Intel architecture which hold address of data and used in memory access.
1) : SI and SS

2) : PI and DI
3) : SI and IP
4) : **SI and DI**
Correct Option : 4 From : Lecture 3
Question # 34
In Intel IAPX88 architecture _____ is the special register containing the address of the next instruction to be executed.
1) : AX
2) : PI
3) : **IP**
4) : SI
Correct Option : 3 From : Lecture 3
Question # 35
SP is a memory pointer and is used indirectly by a set of _____.
1) : instructions
2) : Pointers
3) : Indexes
4) : Variables
Correct Option : 1 From : Lecture 3

Question # 36
_____is also a memory pointer containing the address in a special area of memory called the stack.
1) : SP
2) : **BP**
3) : PB
4) : AC
Correct Option : 2 From : Lecture 3
Question # 37
_____is bit wise significant and accordingly each bit is named separately.
1) : AX
2) : FS
3) : IP
4) : **Flags Register**
Correct Option : 4 From : Lecture 3
Question # 38
When two 16bit numbers are added the answer can be 17 bits long, this extra bit that won't fit
in the target register is placed in the _____where it can be used and tested
1) : **carry flag**
2) : Parity Flag
3) : Auxiliary Carry
4) : Zero Flag
Correct Option : 1 From : Lecture 3
Question # 39
Program is an ordered set of instructions for the processor.
1) : **TRUE**
2) : FALSE
3) :

4) :
Correct Option : 1 From : Lecture 3
Question # 40
For Intel Architecture "operation destination, source" is way of writing things.
1) : **TRUE**
2) : FALSE
3) :
4) :
Correct Option : 1 From : Lecture 3
Question # 41
Operation code " add ax, bx " _____.
1) : Add the bx to ax and change the bx
2) : Add the ax to bx and change the ax
3) : **Add the bx to ax and change the ax**
4) : Add the bx to ax and change nothing
Correct Option : 3 From : Lecture 3
Question # 42
The maximum memory iAPX88 can access is_____.

1) **: 1MB**
2) : 2MB
3) : 3MB
4) : 128MB
Correct Option : 1 From : Lecture 4
Question # 43
The maximum memory iAPX88 can access is 1MB which can be accessed with _____.
1) : 18 bits
2) : 20 bits
3) : 16 bits
4) : 2 bits
Correct Option : 2 From : Lecture 4
Question # 44
_____address of 1DED0 where the opcode B80500 is placed.
1) **: physical memory**
2) : memory
3) : efective
4) : None of the Given
Correct Option : 1 From : Lecture 4
Question # 45
16 bit of Segment and Offset Addresses can be converted to 20bit Address i.e Segment Address with lower four bits zero + Offset Address with _____ four bits zero = 20bit Physical Address
1) : Middle
2) : lower
3) : Top
4) **: upper**
Correct Option : 4 From : Lecture 4
Question # 46

When adding two 20bit Addresses a carry if generated is dropped without being stored anywhere and the phenomenon is called address_____.
1) : **wraparound**
2) : mode
3) : ping
4) : error
Correct Option : 1 From : Lecture 4
Question # 47
segments can only be defined a 16byte boundaries called _____ boundaries.
1) : **segment**
2) : paragraph
3) : Cell
4) : RAM
Correct Option : 1 From : Lecture 4
Question # 48
in a Program CS, DS, SS, and ES all had the same value in them. This is called _____.

1) : equel memory
2) : **overlapping segments**
3) : segments hidding
4) : overlapping SI
Correct Option : 2 From : Lecture 4
Question # 49
"db num1" size of the memory is _____
1) : **1byte**
2) : 4bit
3) : 16bit
4) : 2byte
Correct Option : 1 From : Lecture 5
Question # 50
" 1----------[org 0x0100]
2----------mov ax, [num1] ; load first number in ax
3----------mov bx, [num2] ; load second number in bx
4----------add ax, bx _____
5----------int 0x21
6----------
7----------num1: dw 5
8----------num2: dw 10
Comments for the 4 are :
1) : No comments Will be
2) : ; accumulate sum in add
3) : ; **accumulate sum in ax**
4) : ; accumulate sum in Bx
Correct Option : 3 From : Lecture 5
Question # 51
In " mov ax, bx " is _____ Addressing Modes.
1) : Immediate
2) : Indirect

3) : Direct
4) : **Register**
Correct Option : 4 From : Lecture 5
Question # 52
In “mov ax, [bx] ” is _____ Addressing Modes
1) : **Based Register Indirect**
2) : Indirect
3) : Base Indirect
4) : Immediate
Correct Option : 1 From : Lecture 5
Question # 53
In “mov ax, 5 ” is _____ Addressing Modes
1) **: Immediate**
2) : Indirect
3) : Indirect

4) : Register
Correct Option : 1 From : Lecture 6
Question # 54
In “ mov ax, [num1+bx] ” is _____ ADDRESSING
1) : OFFSET+ Indirect
2) : Register + Direct
3) : Indirect + Reference
4) : **BASEd REGISTER + OFFSET**
Correct Option : 4 From : Lecture 7
Question # 55
“base + offset addressing ” gives This number which came as the result of addition is called
the _____.
1) : Address
2) : mode
3) : **effective address**
4) : Physical Address
Correct Option : 3 From : Lecture 7
Question # 56
“mov ax, [cs:bx]” associates _____ for this one instruction
1) : CS with BX
2) : **BX with CS**
3) : BX with AX
4) : None of the Given
Correct Option : 2 From : Lecture 7
Question # 57
For example
BX=0100
DS=FFF0
And Opcode are;
move [bx+0x0100], Ax
now what is the effective memory address;
1) : 0020

2) : 0200
3) : 0300
4) : 0x02
Correct Option : 2 From : Lecture 7
Question # 58
For example
BX=0100
DS=FFF0
And Opcode are;
move [bx+0x0100], Ax
now what is the physical memory address;
1) : 0020
2**) : 0x0100**
3) : 0x10100
4) : 0x100100
Correct Option : 2 From : Lecture 7

Question # 59
In " mov [1234], al " is _____ Addressing Modes.
1) : Immediate
2) : Indirect
3) **: Direct**
4) : Register
Correct Option : 3 From : Lecture 8
Question # 60
In " mov [SI], AX " is _____ Addressing Modes.
1) : Basef Register Indirect
2) : Indirect
3) : **Indexed Register Indirect**
4) : Immediate
Correct Option : 3 From : Lecture 8
Question # 61
In " mov ax, [bx - Si] " is _____ ADDRESSING
1) : Basef Register Indirect
2) : Indirect
3) : Direct
4) : **illegal**
Correct Option : 4 From : Lecture 8
Question # 62
In " mov ax, [BL] " there is error i.e. _____
1) : Address must be 16bit
2) : Address must be 8bit
3) : Address must be 4bit
4) **: 8 bit to 16 bit move illegal**
Correct Option : 4 From : Lecture 8
Question # 63
In " mov ax, [SI+DI] " there is error i.e. _____
1) : **Two indexes can't use as Memory Address**
2) : index can't use as Memory Address

3) : I don't Know
4) : None of the Given
Correct Option : 1 From : Lecture 8
Question # 64
In JNE and JNZ there is difference for only _____;
1) : **Programmer or Logic**
2) : Assembler
3) : Debugger
4) : IAPX88
Correct Option : 1 From : Lecture 9
Question # 65
JMP is Instruction that on executing take jump regardless of the state of all flags is called_____
1) : Jump

2) : Conditional jump
3) : **Unconditional jump**
4) : Stay
Correct Option : 3 From : Lecture 9
Question # 66
When result of the source subtraction from the destination is zero, zero flag is set i.e. ZF=1
its mean that;
1) : **DEST = SRC**
2) : DEST != SRC
3) : DEST < SRC
4) : DEST > SRC
Correct Option : 1 From : Lecture 9
Question # 67
When an unsigned source is subtracted from an unsigned destination and the destination is
smaller, borrow is needed which sets the _____.
1) : carry flag i.e CF = 0
2) : **carry flag i.e CF = 1**
3) : Carry Flag + ZF=1
4) : None of the Given
Correct Option : 2 From : Lecture 9
Question # 68
In the case of unassigned source and destination when subtracting and in the result ZF =1 OR
CR=1 then _____
1) : DEST = SRC
2) : DEST != SRC
3) : UDEST ? USRC
4) : **DEST < SRC**
Correct Option : 3 From : Lecture 9
Question # 69
In the case of unassigned source and destination when subtracting and in the result ZF =0

AND CR=0 then _____
1) : DEST = SRC
2) : DEST != SRC
3) : UDEST < USRC
4) : **UDEST > USRC**
Correct Option : 4 From : Lecture 9
Question # 70
In the case of unassigned source and destination when subtracting and in the result CR=0
then _____
1) : DEST = SRC
2) : DEST != SRC
3) : UDEST < USRC
4) : **UDEST ? USRC**
Correct Option : 4 From : Lecture 9
Question # 71
_____This jump is taken if the last arithmetic operation produced a zero in its destination.
After a CMP it is taken if both operands were equal.

1) : **Jump if zero(JZ)/Jump if equal(JE)**
2) : Jump if equal(JE)
3) : Jump if zero(JZ)
4) : No Jump fot This
Correct Option : 1 From : Lecture 9
Question # 72
_____This jump is taken after a CMP if the unsigned source is smaller than or equal to the
unsigned destination.
1) : JBE(Jump if not below or equal)
2) : **JNA(Jump if not above)/JBE(Jump if not below or equal)**
3) : JNA(Jump if not above)
4) : No Jump fot This
Correct Option : 2 From : Lecture 9
Question # 73
Numbers of any size can be added using a proper combination of _____.
1) : **ADD and ADC**
2) : ABD and ADC
3) : ADC and ADC
4) : None of the Given
Correct Option : 1 From : Lecture 11
Question # 74
Like addition with carry there is an instruction to subtract with
borrows called_____.
1) : SwB
2) **: SBB**
3) : SBC
4) : SBBC
Correct Option : 2 From : Lecture 11

Question # 75
if "and ax, bx" instruction is given, There are _____
operations as a result
1) : **16 AND**
2) : 17 AND
3) : 32 AND
4) : 8 AND
Correct Option : 1 From : Lecture 12
1. Assembly language is not a low level language.
a. True
b. False
2. In case of COM File first command parameter is stored at _____ offset of program
segment prefix.
a. 0x80 (Not Confirm)
b. 0x82
c. 0x84
d. 0x86

3. Address always goes from
a. Processor to meory
b. Memory to processor
c. Memory to memory
d. None of the above
4. The sourse register in OUT is
a. AL or AX
b. BL or BX
c. CL or CX
d. DL or DX
5. By default CS is associated with
a. SS
b. BP
c. CX
d. IP
6. Which of the following pins of parallel port are grounded
a. 10-18
b. 18-25
c. 25-32
d. 32-39
7. In the instruction mov word [es:160], 0x1230, 30 represents the character
a. A
b. B
c. 0
d. 1
8. On executing 0x21 0x3D, if file cant be opened then
a. CF will contain 1
b. CF will contain 0
c. ZF will contain 1
d. ZF will contain 0

9. Which of the following IRQ is cascading interrupt
a. IRQ 0
b. IRQ 1
c. IRQ 2
d. IRQ 3
10. The execution of instruction mov word [es:160], 0x1230, will print a character on the
screen at
a**. First column of second row**
b. Second column of first row
c. Second column of second row
d. First column of third row

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1)))SHR and SAL are same?
.True (correct)
.False
2)))mov ax,0 will set ZF flag
.True
.False
3)))In 9 pin DB connector ,which pic is assigned to TD.
. 1
. 2
. 3(correct)
. 4
4)))Lower 16 bits of EAX are labeled as
. AX(correct)
. BX
.EAX
.none of above
5))) which is the special prefix used for repeating a block
.**rep(correct)**
.repeat
.repb
.repe
6)) JA can not after cmp if unsigned destinition is greater than
source
.true
.false
Q=1
Conditional jump can only:
1. Far
2. short
3. near
4. all of the given
q=2:
Address is always go from:
1. Processor to memory
2. Memory to processor

3. Memory to memory
4. None of given
Q=3;
Programmable interrupt controllers have two ports 20 and 21……port 20 is a control port while port 21 is ……..
1. The interrupt make register
2. Interrupt port
3. Output port
4. Input port
Q=4:

In the instruction "move word[es:160],0x1230 represent the charechter……..
1. A
2. B
3. 0
4. 1
Q=5:
The 8088 processor divides interrupts into how many classes?
1. 2
2. 3
3. 4
4. 5
Q=6:
Which of the following is the pair of register used to access memory in string instruction?
1. DI and BP
2. SI and BP
3. DI and SI
4. DS and SI
Q=7:
In case of COM file,first command line parameter is stored at ……..offset of program segment prefix'
1. 0x80
2. 0x82
3. 0x84
4. 0x86
Q=8:
The INT 0x13 service 0x03 is use to …
1. Read disk sector
2. Write disk sector
3. Reset disk sector
4. Get drive parameters
Q=9:
After the execution of STOSWB,the CX wil be……..
1. Incremented by 1
2. Incremented by 2
3. Decremented by 1
4. Decremented by 2
Q=10
The execution of the instruction "mov word [ES:160],0x1230"will print a character on the

screen at:
1. First column of second row
2. Second column of first row
3. Second column of second row
4. First column of third row

Question No: 17 (Marks: 1)
Write any two control instructions.
Question No: 18 (Marks: 1)
RET instruction take how many arguments
Question No: 19 (Marks: 2)
Explain the fuction of rotate right (ROR) instruction
Question No: 20 (Marks: 2)
Describe the PUSH function
Question No: 21 (Marks: 3)
Write down the names of four segment registers?
Question No: 22 (Marks: 3)
For what purpose "INT 4" is reserved?
Question No: 23 (Marks: 5)
Given that [BX+0x0100] BX=0x0100
=0xFFF0
Calculate the physical address
Question No: 17 (Marks: 2)
What is difference between SHR and SAR instructions?
SHR
The SHR inserts a zero from the left and moves every bit one position to the right and copy
the rightmost bit in the carry flag.
SAR
The SAR shift every bit one place to the right with a copy of the most significant bit left at the most significant place. The bit dropped from the right is caught in the carry basket. The
sign bit is retained in this operation.
Question No: 18 (Marks: 2)
For what purpose "**INT 1**" is reserved ?
Question No: 19 (Marks: 2)
Define implied operand?
An implied operand means that it is always in a particular register say the accumulator. It
needs to not be mentioned in the instruction.
Question No: 31 __ (Marks: 1)
Which services are gained bi INT 0x16

Solution:
BIOS KEY BOARD SRVICES
Question No: 32 (Marks: 1
Give the name of any one VESA servic
Question No: 33 (Marks: 2)

INT 14 - SERIAL - READ CHARACTER FROM PORT
By using above port what do AH,AL and DX shows here?
Question No: 34 (Marks: 2)
What do these instructions do ? write your answer in single line.
mov cx, 0xffff
loop $
Question No: 35 (Marks: 3)
Define the protected mode
Solution:
Question No: 36 (Marks: 3)
Write a program in assembly language to disable keyboard interrupt using PIC mask register
Hint: Only five instructions are needed
Solution:

```
; disable keyboard interrupt in PIC mask register
[org 0x0100]
in al, 0x21 ; read interrupt mask register
or al, 2 ; set bit for IRQ2
out 0x21, al ; write back mask register
mov ax, 0x4c00 ; terminate program
int 0x2
```

Question No: 37 (Marks: 3)
Read the following passage carefully and fill the blanks with proper words.
Note: Don't rewrite the passage just write the words in same order.
"BIOS sees the disks as a combination of sectors, tracks, and....HEADS..., as a raw storage device without concern to whether it is reading a file or directory. .....BIOS..... provides the simplest and most powerful interface to the storage medium. However this raw storage is meaningless to the user who needs to store his files and organize them into.....DIRECTROIES..... . "

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Set-32

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Set-33

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Set-34

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Set-35

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