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Connecting VU Students

| | FINALTERM EXAMINATION<br>SPRING 2006<br>CS610 - COMPUTER NETWORK (Session - 1 ) | Marks: 60<br>Time: 120min |
|---|---|---|

StudentID/LoginID: _____

Student Name: _____

Center Name/Code: _____

Exam Date: Tuesday, August 15, 2006

**Please read the following instructions carefully before attempting any of the questions:**

**1**. Attempt all questions. Marks are written adjacent to each question.

**2**. Do not ask any questions about the contents of this examination from anyone.

***a***. If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.

***b***. If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.

***c***. Write all steps, missing steps may lead to deduction of marks.

****WARNING: Please note that Virtual University takes serious note of unfair means. Anyone found involved in cheating will get an `F` grade in this course.**

| For Teacher's use only | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | Total |
| Marks | | | | | | | | | | | |

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

Two computers **E** and **F** are expected to communicate frequently, in a LAN. While designing a **LAN** which of the following is the way through which the traffic between **E** and **F**, will be least affected to the other computers/traffic on the network

- Make the two computers in different LAN segment and connect both the segments via bridge
- Make the computer in a single LAN segment
- Connect both the computers using switch in between them
- Make the two computers in different LAN segments and connect both the segments via router

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

In which of the following **OSI** reference layers, does repeater operates?

- Physical
- Data link
- Network
- Session

Question No: 3 ( Marks: 2 ) - Please choose one

Which of the following is not true about **OSPF**?

- Allows routers introduce routes learned from other means
- Similar to IGP
- An address mask is attached with each address

- Allows classful and classless addresses but not subnetted

Question No: 4 ( Marks: 2 ) - Please choose one

Static routing is more flexible than dynamic routing.

- True
- False

Question No: 5 ( Marks: 2 ) - Please choose one

**UDP** provides connectionless data delivery.

- True
- False

Question No: 6 ( Marks: 7 )

Write the use of token in-case of ring or star topology, how it works?

Question No: 7 ( Marks: 10 )

Consider the above figure, in which there is a **cloud of networks** having various networks.

Suppose there are **7 routers** in between **Host A** and **Host B**.
Identify

a. How come host **A** knows the **addresses** of all the r**outers** between **A to B**?
b. What will be the value of the **TTL field** when the source **host A** sends the datagram **7th time** towards the destination **B**, and the **third router** in the path receives that datagram?
c. How many times does the source **A** needs to send the datagram so that it finally reaches at destination host **B**?
d. What will be the value of the **TTL field** when the source **host A** sends the datagram **4th time** towards the destination **B**, and the **second router** in the path receives that datagram?

e. What will be the value of the **TTL field** when the source host **A** sends the **datagram first time** towards the destination **B**, and the **first router** in the path receives that datagram?

Question No: 8 ( Marks: 15 )

Given are the **five networks** connected to each other via **routers**.

**Networks1** is connected to **Network 2** through **R1-2**, **Network 2** is connected to the **Network3** through **R2-3** and so on. **W** represents the **weights** between network nodes. **Host A** belongs to **Network 1** whereas **Host B** belongs to **Network 5**

The **MTU** size of each network is as follows

| **Network No.** | **MTU size** |
|---|---|
| 1 | 128bits |
| 2 | 32 bits |
| 3 | 64 bits |
| 4 | 32 bits |
| 5 | 16 bits |

**Host A** sends a datagram of size **128 bits** to **Host B**.

a. Find out which **path** will the datagram be adopting in reaching to the destination **B** by **Djikstra'**s algorithm.
b. Which of the **routers** in the path needs to **fragment** the datagram?
c. The original datagram is finally split into **how many datagrams** to reach at the destination.

Question No: 9 ( Marks: 18 )

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Consider the **IP** addresses and the corresponding **subnet masks**,

**i- 187.199.127.5 , 255.255.255.0**
**ii- 72.32.10.4 , 255.240.0.0**

Find out the following against both of the above **IP** addresses

a. The **network class** in which the **IP address** falls.
b. The **number of bits** used for **subnetting**.
c. Total **number of host** in the **subnet**
d. The **network address** of the **subnet**.
e. The **subnet address** of the **IP address.**