

Instructions

1. Take print out of the table below on all the answer sheets (pages)
2. Use separate pages for separate questions.
3. If any two or more assignments are having same contents, then it will be considered as copying of assignment will lead to zero marks to all the candidates.
4. Write answers in your own handwriting and in your own words, copying directly from internet will lead to no gain of knowledge.
5. Do not share your assignment with any other student(s).
6. Present your answers with well-drawn figures.
7. No assignment will be accepted after last date.
8. No assignment will be accepted through LPU-Live
9. Assignment to be updated on UMS link only, do not wait for last date

Format for assignment submission

Course Code: CAP 275		Course Title: Data Communication and Networking		
Course Instructor: Dr. Manmohan Sharma				
Student's Roll no:		Student's Reg. no:		
Name:		Signature		
Set	A / B	Question No.	Page No.	Total Pages

CAP275 Data Communication Networking

Continuous Assessment I Set A

1. Explain four basic network topologies, and cite advantages and disadvantages of each type.

For each of the following four networks, discuss the consequences if a connection fails.

- a. Five devices arranged in a mesh topology
- b. Five devices arranged in a star topology (not counting the hub)
- c. Five devices arranged in a bus topology
- d. Five devices arranged in a ring topology

(6+4)10 marks

2. How does information get passed from one layer to the next in the Internet model? What are headers and trailers, and how do they get added and removed? With the help of examples explain the concerns of the physical layer, data link layer, network layer, transport layer and application layers in the internet model?

10 marks

3. Explain working of the following networking medium / devices with the help of supporting diagrams.

- a. UTP Cable
- b. Router

(5+5) 10 marks

CAP275 Data Communication Networking

Continuous Assessment I Set B

1. What are the two types of line configuration? What are the advantages of a multipoint connection over a point-to-point connection?

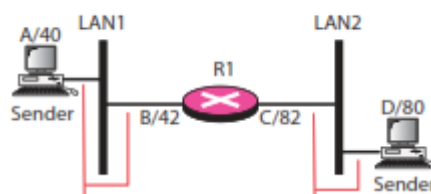
For 6 devices in a network, what is the number of cable links and ports are required for connecting the devices using mesh, ring, bus, and star topology?

In the bus topology, what happens if one of the stations is unplugged?

(4+4+2) 10 marks

2. Match the following to one or more layers of the OSI model:
 - i. Route determination
 - ii. Flow control
 - iii. Interface to transmission media
 - iv. Reliable process-to-process message delivery
 - v. Defines frames
 - vi. Provides user services such as e-mail and file transfer
 - vii. Transmission of bit stream across physical medium
 - viii. Error correction and retransmission
 - ix. Mechanical, electrical, and functional interface
 - x. Responsibility for carrying frames between adjacent nodes

In the given network, assume that the communication is between a process running at computer A with port address **i** and a process running at computer D with port address **j**. Show the contents of packets and frames at the transport layer, network layer, and data link layer for each hop.



(5+5) 10 marks

3. Explain working of the following networking medium or devices with the help of supporting diagrams.
 - a. Network Switch
 - b. Optical fibre cable.

(5+5) 10 marks