B.Sc. (IT)   (Sem.–4)

COMPUTER NETWORKS

Subject Code : UGCA-1913

M.Code : 79439

Date of Examination : 13-12-22

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**

2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Write briefly :**

   a) How does laser transmission works?

   b) Explain as to how error detection at the data link level is achieved.

   c) What is a subnet mask is used for?

   d) Which fields in an IP header uniquely identifies a connection (when viewed from Network)?

   e) Which layer provides End-to-end connectivity from Host-to-host?

   f) Which layer decides which physical pathway the data should take?

   g) What are the possible ways of data exchange?

   h) How Gateway is different from Routers?

   i) What is attenuation?

   j) What is the difference between bit rate and baud rate?

SECTION-B

2. How are dual-ring systems used to maintain a link when a station fails? Explain this with the help of a diagram. For *n* devices in a network, what is the number of cable links required for a mesh, ring and star topology, respectively?

3. What are three similarities and three differences between OSI and TCP reference models? UDP is a connectionless protocol. Why does its exist? Explain this.

4. If a size of a window is 3 bits, how many packets can be sent using Go Back N without getting an acknowledgement? Explain your answer. Explain the factors which will determine the length of the sliding window.

5. What are the types of Transmission media used in computer networks? Compare their cost vs the throughput.

6. Explain the connection establishment and multiplexing in the transport layer protocol. Explain the three differences between CSMA/CD and token ring protocol.

7. What are the two popular approaches to packet switching? Explain any one of these approaches with the help of a diagram. Differentiate between Hubs, Switches and bridges.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.