

**COMPUTER NETWORKS**

(Common to CSE & IT)

Time: 3 hours

Max. Marks: 70

**PART – A**

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) How Internet has evolved over the years.
  - (b) How do you compute the data rate limits?
  - (c) What are the advantages and disadvantages of Hub as a connecting device?
  - (d) What is the difference between point to point and broadcast channels?
  - (e) How the transport layer is affected if network layer provides connection less service.
  - (f) How packet loss affects performance of file transfer and video streaming.
  - (g) What is the use of sequence numbers in transport layer?
  - (h) Among TCP and UDP which one is suitable for online game playing?
  - (i) What are the functions of a client and server in a client server environment?
  - (j) What is the typical format of an email message?

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 (a) What are the functions performed by the different layers of the TCP/IP reference model?  
(b) Why layered approach is used for design of computer networks?

**OR**

- 3 (a) What are the functions performed by the different layers of the OSI reference model?  
(b) Describe the categories of Twisted pair cable.

**UNIT – II**

- 4 (a) What are the applications for which error detection is useful? What are the applications for which error correction is useful? Justify.  
(b) How the sliding window helps in transfer of data at the data link layer?

**OR**

- 5 (a) Assuming ideal environment, what are the data link protocols which are suitable and how they work. How introduction of noise and finite buffer affect them?  
(b) What is channelization?

**UNIT – III**

- 6 (a) What is the format of distance vector? How and when the distance vectors are exchanged?  
(b) What is the major problem with distance vector routing algorithm? What is the solution for it? Illustrate it.

**OR**

- 7 (a) What are the different fields of an IP header? Explain them.  
(b) Explain how group management is achieved.

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**UNIT – IV**

- 8 (a) What are the different fields of a TCP header? Explain them.  
(b) Among TCP and UDP which one is suitable for large file transfer? Justify your answer.

**OR**

- 9 (a) Among TCP and UDP which one is suitable for request-reply type of service? Justify your answer.  
(b) Suggest ways of improving the performance of a computer network. How do you measure the performance? What are the tradeoffs between different performance measurements?

**UNIT – V**

- 10 (a) Imagine WWW is not available and only Internet is available. How file transfer application should work.  
(b) Explain the working of FTP.

**OR**

- 11 (a) Explain the working of TELNET.  
(b) How security is provided by SSH?

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