

**B.TECH.**  
**THEORY EXAMINATION (SEM–VI) 2016-17**  
**COMPUTER NETWORK**

*Time : 3 Hours*

*Max. Marks : 100*

*Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.*

**SECTION – A**

1. **Explain the following:** **10 x 2 = 20**
- (a) Write about user access in ISDN.
  - (b) List the advantages and disadvantages of star topology.
  - (c) Compare ALOHA with slotted ALOHA.
  - (d) State the requirements of CRC.
  - (e) Provide few reasons for congestion in a network.
  - (f) With the given IP-address, how will you extract its net-id and host-id?
  - (g) What is piggybacking?
  - (h) How does transport layer perform duplication control?
  - (i) Mention the use of HTTP.
  - (j) List out few email gateways.

**SECTION – B**

2. **Attempt any five of the following questions:** **5 x 10 = 50**
- (a) Discuss the issues in the data link layer and about its protocol on the basis of layering principle.
  - (b) Explain network topological design with necessary diagram and brief the advantages and disadvantages of various topologies.
  - (c) Consider the use of 10 K-bit size frames on a 10 Mbps satellite channel with 270 ms delay. What is the link utilization for stop-and-wait ARQ technique assuming  $P=10^{-3}$ ?
  - (d) Brief about how line coding implemented in FDDI and describe its format.
  - (e) Enumerate on TCP header and working of TCP and differentiate TCP and UDP with frame format.
  - (f) Explain the three way handshaking protocol to establish the transport level connection
  - (g) Elaborate about TELNET and its working procedure.
  - (h) How does FTP work? Differentiate between passive and active FTP.

**SECTION – C**

- Attempt any two of the following questions:** **2 x 15 = 30**
- 3 (i) Explain functionalities of every layer in OSI reference model with neat block diagram.
- (ii) Illustrate the performance issues for GO-BACK-N data link protocol.
- 4 (i) Describe the problem of count to infinity associated with distance vector routing technique.
- (ii) Enumerate how the transport layer ensure that the complete message arrives at the destination and in the proper order.
- 5 Explain the SNMP protocols in detail.