

**B.Tech. – VIEP – ELECTRONICS AND
COMMUNICATION ENGINEERING
(BTECVI)**

Term-End Examination

December, 2016

**BIELE-016 : DATA COMMUNICATION
AND NETWORK**

Time : 3 hours

Maximum Marks : 70

Note : *Attempt any seven questions. All questions carry equal marks. Assume missing data suitably. Use of scientific calculator is permitted.*

1. (a) Discuss and draw the TCP/IP reference model.
- (b) Which of the TCP/IP reference model layers deal primarily with network operations ? Explain. 5+5=10
2. (a) Compare LAN, MAN and WAN based on their important features.
- (b) Draw outlining and discuss the WAN topology which spans a large geographical area in your country. 5+5=10

3. What is the need of collision-free protocol ? Explain Bitmap and binary countdown protocol in detail. 10
4. Explain the IEEE 802.3 with its advanced features and applications. 10
5. (a) What is the baud rate of the standard 10 mbps Ethernet ?
- (b) An 802.16 network has a channel width of 20 MHz. How many bits/sec. can be sent to a subscriber station ? 5+5=10
6. (a) How does the data link layer deal with the issue of error control ?
- (b) Write and explain error correcting and error detecting codes with suitable examples. 5+5=10
7. Discuss the important features of Point-to-Point Protocol (PPP) ? Explain its full frame format for unnumbered mode of operation. 10
8. (a) Explain the principle of Token Bucket algorithm for traffic shaping in Network layer.
- (b) Write down the various Routing algorithms in Network layer. 5+5=10

9. What is the User Datagram Protocol (UDP) ?
Explain the usefulness of UDP in the area of
real-time transport protocol. 10
10. What is the channel allocation problem ? Discuss
the static and dynamic channel allocation
schemes in LANs or MANs with their
advantages. 10
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