

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

00913 Term-End Examination

June, 2018

**BIEL-021 : COMPUTER COMMUNICATION
NETWORKS**

Time : 3 hours

Maximum Marks : 70

*Note : Attempt any **seven** questions. All questions carry equal marks. Missing data, if any, may be suitably assumed. Use of scientific calculator is permitted.*

1. Describe the functions of each layer in the OSI model with the help of necessary diagram. 10

2. (a) Distinguish between a DSL modem and a DSLAM (DSL Access Multiplexer). 5
(b) Enlist the various protocols for noisy channel. Explain any one of them. 5

3. (a) Explain piggybacking. Write down its usefulness in data link control. 5

- (b) Define Random Access. Explain how pure ALOHA is different from slotted ALOHA multiple access protocol. 5
4. Explain FDMA, TDMA and CDMA techniques with the help of necessary diagrams. 10
5. (a) Draw and explain the IEEE standard for the traditional OSI model. 5
- (b) Compare full-duplex mode and half-duplex mode with suitable diagram. 5
6. (a) Write down the objective of giga-bit ethernet. Describe the various features of physical layer in giga-bit ethernet. 5
- (b) What is the difference between a bus backbone and a star backbone? 5
7. (a) Explain connecting devices like hubs, repeaters, bridges, routers and gateways used in LANS. 5
- (b) Define fragmentation and explain why the IPv4 and IPv6 protocols need to fragment some packets. 5

8. (a) Compare and contrast the fields in the main headers of IPv4 and IPv6. 5
- (b) Discuss various types of forwarding techniques used to manage routing tables and security issues with necessary diagram. 5
9. (a) Explain Unicast, Multicast and Broadcast communication with suitable example. 5
- (b) Describe User Datagram Protocol (UDP) with well known ports and its format. 5
10. Write short notes on any *two* of the following : $2 \times 5 = 10$
- (a) Various Components of Telephone Network
- (b) Domain Name System
- (c) HDLC (High-Level Data Link Control).
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