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

00374 **Term-End Examination**

June, 2017

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. What is OSI reference model ? Compare it with TCP/IP reference model. Why is TCP/IP reference model more popular than OSI model ? Which layer of TCP/IP model is used for the following services ? *10*

(a) To route packets

(b) To convert packets to frame

(c) To detect and correct errors

(d) To run services like FTP, Telnet, etc.

2. (a) Write down the major components of a telephone network. Enlist the various services provided by telephone networks. 5

(b) Explain 'Go-back-N' and 'stop-and-wait' automatic repeat request in noisy channels. 5

3. Describe various station types link configuration and data transfer modes of High Level Data Link Control (HDLC). 10

4. Discuss persistent and non-persistent CSMA (Carrier Sense Multiple Access) protocols. Also explain CSMA with collision detection protection. 10

5. (a) Why is multiplexing so cost-effective ? Explain how synchronous Time Division Multiplexing (TDM) works. 5

(b) Explain the functions of Hub, Switch and Bridge in LANs. 5

6. (a) Compare the main features of Fast Ethernet and Gigabit Ethernet. 5

(b) Draw and explain the architecture of IEEE 802·11. 5

7. (a) List out the main responsibilities of the network layer. 5

(b) Explain header translation from IPv4 to IPv6. 5

8. (a) Describe the addressing schemes of IPv6. *5*

(b) What are bus and star backbone networks ? *5*

9. (a) Compare unicast and multicast routing protocols. Also write down the applications of multicast routing. *5*

(b) Explain various services and features of TCP. *5*

10. Write short notes on any ***two*** of the following : *2×5=10*

(a) Function of Transport Layer

(b) Channelisation

(c) IEEE Standards

(d) Intra and Inter Domain Unicast Routing Protocols