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

00329   **Term-End Examination**

December, 2014

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.*

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1. (a) What is the difference among a port address, a logical address and a physical address ?   *3*

    (b) Explain the functions of each layer in TCP/IP model.   *5*

    (c) What are the three major components of a telephone network ?   *2*

2. (a) Define framing. What are the reasons for using a "framing" technique ?   *5*

    (b) Discuss briefly the different types of Random access protocols.

3. (a) Explain the CSMA and CSMA/CD protocols in detail. 5

   (b) Differentiate between pure and slotted ALOHA. 5

4. (a) What is Fast Ethernet ? Explain autonegotiation. What are the purposes of using this feature in design of Fast Ethernet ? 6

   (b) Explain two different kinds of services as defined in IEEE 802.11. 4

5. (a) Differentiate between a bus backbone network and a star backbone network. 5

   (b) Explain the concept of Virtual Local Area Network (VLAN) in brief. 5

6. Draw and explain the IPv4 datagram header format in detail and compare it with IPv6. 10

7. What is meant by routing ? How can it be classified ? Briefly describe the shortest path routing and hierarchical routing algorithms with suitable example. 10

8. (a) Explain the TCP connection management in brief. 5

   (b) What do you mean by Domain Name System ? Explain. 5

9. (a) What is the difference between a hub and a switch ? **4**

(b) Explain Dijkstra's algorithm. Apply the same to node 'A' of the graph shown in figure 1 and prepare routing table for node 'A'. **6**
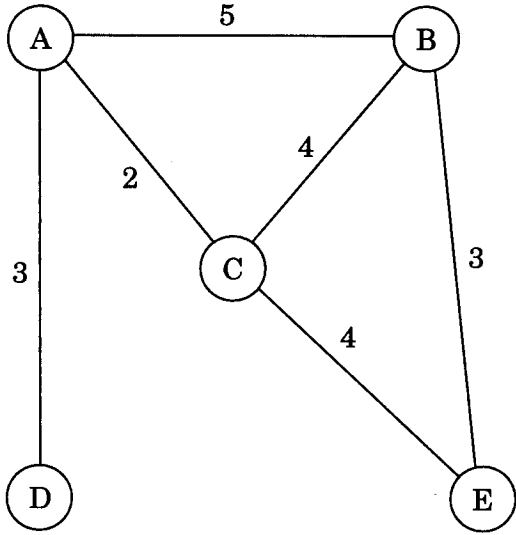

Figure 1

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

(a) UDP

(b) Piggybacking

(c) HDLC

(d) RPC