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Question Paper Code : 90478

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

Fifth Semester

Electronics and Communication Engineering

EC 8551 – COMMUNICATION NETWORKS

(Common to : Electronics and Telecommunication Engineering)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Point out the fundamental characteristics of data communication system.
2. Classify the types of addresses in link-layer protocol.
3. What is the need of escape character?
4. Summarize the different Ethernet generations.
5. Outline the benefits of Open Shortest Path First (OSPF) Protocol.
6. Justify the strategies in transition from IPv4 to IPv6.
7. Draw the TCP header format.
8. List the Quality of Service parameters of Transport layer.
9. Write the name of components used in e-mail system.
10. Compare HTTP with persistent and Non-persistent Connection.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the various layers and functions of OSI model in detail.

Or

- (b) Elaborate the Address Resolution Protocol with an example in detail.

12. (a) Explain in detail about the architecture of Bluetooth and its Protocol layers.

Or

- (b) Illustrate the following terms with working
- (i) Routing and Forwarding (7)
 - (ii) Services provided by Network (6)
13. (a) Elaborate in detail about the Address Space, Address Space Allocation and IPv6 addressing.

Or

- (b) Elucidate Distance Vector Multicast Routing protocol. Summarize the metrics with its calculation method.
14. (a) Evaluate the services and Applications in User Datagram Protocol in brief.

Or

- (b) Write in detail about the principle of establishing QoS through Differentiated services.
15. (a) Demonstrate how SMTP Protocol is used in E-mail applications in detail.

Or

- (b) Elaborate the importance of MIME with neat diagram. Give its comparison between POP-3 and IMAP-4.

PART C — (1 × 15 = 15 marks)

16. (a) Construct the Forward Error Correction techniques with an example.

Or

- (b) Discuss in detail about the operation of hierarchically structured OSPF protocol by considering a suitable network.