Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 30535

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2024.

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. Differentiate between half duplex and full duplex.

2. Consider that the data word to be transmitted is 100100 and key is 1101. Determine parity bits for the given data.

3. Find the three different device types of Zigbee device.

4. Write the types of stations is HDLC.

5. What are the metrics used in determining the best path for a routing protocol?

6. Define distance-vector routing.

7. Point out the responsibilities of error control in transport layer.

8. Assess the ways to deal with congestion.

9. Why DNS Resolver bootstrap the domain name lookup process?

10. Mention the limitations of SMTP.

PART B — (5 × 13 = 65 marks)

11. (a) Define data communications. Describe the five components of data communications system with necessary diagrams.

Or

(b) Draw the OSI model and describe the responsibilities of each layer in the model.

12. (a) Describe the working principle of stop and wait and sliding window mechanism with an example.

Or

(b) Illustrate an architecture and MAC layers of IEEE 802.11 with necessary diagrams.

13. (a) Discuss the message types of Internet Control Message Protocol and High light the purpose of error reporting messages.

Or

(b) Write a brief note on Mapping of Logical to Physical Address and Show the packet format of ARP.

14. (a) Explain the flow control mechanism of TCP with necessary illustrations.

Or

(b) Explain the UDP header with a detailed diagram. What are the benefits of UDP?

15. (a) Describe the encryption and decryption method used in DES.

Or

(b) Explain in details how electronic mail application is carried out in a network. Also explain the protocols used in this applications.

PART C — (1 × 15 = 15 marks)

16. (a) (i) Illustrate the classes in classful addressing and define the application of each class with an example. (8)

(ii) Find the class, net id, and host id of the following IP addresses. (7)

(1) 208.34.54.12

(2) 238.34.2.1

(3) 114.34.2.8

(4) 129.14.6.8

Or

(b) Identify the Link state routing algorithm for the given network and tabulate the steps for building routing table for node D.