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

Question Paper Code : 50495

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023

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. State the three criteria necessary for an effective and efficient network.

2. Give the steps involved in checksum generation.

3. What is Ethernet? Mention some of its physical properties.

4. How does a given bridge learn whether it should forward a multicast frame over a given port?

5. State the keys for understanding the distance vector routing.

6. Expand ICMP and write the function.

7. What is the difference between congestion control and flow control.

8. Draw TCP header format.

9. What is a digital signature? Give example.

10. Mention the requests messages support SNMP.

PART B — (5 × 13 = 65 marks)

11. (a) With a neat sketch, Explain the function of OSI network architecture.

Or

(b) Discuss in detail about packet switching techniques with its suitable example.

12. (a) Explain the media access control algorithm, CSMA/CD used in Ethernet. Why the same algorithm cannot be used in wireless LAN.

Or

(b) Describe the error reporting using ICMP protocol. How does Trace route program makes use of ICMP to determine the name and addresses of the routers between source and destination?

13. (a) Explain the strategies involved in Transition of Ipv4 to Ipv6 in detail with neat sketch.

Or

(b) Define multicasting and explain in detail about multicast address. Give example.

14. (a) Explain the three – way handshake protocol to establish the transport level connection. Discuss about quality of services.

Or

(b) Illustrate the working of congestion avoidance using random early detection in transport layer with example.

15. (a) Describe the main aspects of hypertext transfer protocol (HTTP) in accessing data on world wide web. Give example.

Or

(b) Define cryptography with its types. Explain the principle of RSA algorithm and how the public and secret keys are derived.

PART C — (1 × 15 = 15 marks)

16. (a) The following is a dump of a TCP header in Hexadecimal format 05320017 00000001 00000000 500207FF 00000000 Determine the source port number, Destination port number, Sequence Number, Acknowledgement number, Length of the header, Type of the segment and Window Size.

Or

(b) A student attaches a laptop to campus network and requests/receives a web page from www.google.com. Explain the sequence of operations carried out with the help of different protocols used in application, transport, network, and link layers.

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