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Question Paper Code: 1065343

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV/ DEC 2024
Fifth Semester
Electronics and Communication Engineering
U20EC505 – COMMUNICATION NETWORKS AND ARCHITECTURE
(Regulation 2020)

Time: Three Hours Maximum: 100 Marks

Answer ALL questions

PART – A (10 x 2 = 20 Marks)

1. Define Simplex, Half duplex and Full duplex.

2. List the functions of the data link layer.

3. Outline the frame format of IEEE 802.3 (Ethernet).

4. Define network layer protocols.

5. Compare unicast routing with multicast routing.

6. In an IPv4 packet, the value of HLEN is 1000 in binary. How many bytes of options are being carried by this packet?

7. Define stored program concept.

8. Write the logical and control operations in computer.

9. Subtract $(-6)_{10}$ from $(7)_{10}$ in binary.

10. Compare and contrast SRAM and DRAM.

PART – B (5 x 16 = 80 Marks)

11. (a) Explain OSI Network architecture in detail with a neat diagram. (16)

(OR)

(b) What is error control? Mention the various error types. Illustrate any one error detection techniques with an example. (16)

12. (a) With a neat diagram, provide a detailed explanation of the Bluetooth architecture and its layers, focusing on how the frame format is structured. (16)

(OR)

(b) Discuss in detail the IPv4 packet format and its various address classifications with an example. (16)

13. (a) Elaborate on the unit cost routing protocol with neat diagram. (16)

(OR)

(b) (i) Explain and analyze the packet format of an IPV6 datagram. (8)
(ii) Analyze how the transition can be made from IPv4 to IPv6. (8)

14. (a) Elaborate the basic addressing modes for MIPS and give an example for each category. (16)

(OR)

(b) Analyze the various instruction formats and illustrate with an example. (16)

15. (a) (i) Discuss the two ways the system using cache memory can proceed for a write operation. (8)
(ii) Discuss the process of building a single data path with neat diagram. (8)

(OR)

(b) (i) Describe the principle approaches of serial bus architectures with necessary illustrations. (10)
(ii) Explain in detail about pipelined data path and control. (6)

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