

Class : I PG
Major : Computer Science

Time: 3 hours
Max. Marks: 60

17MCSC04 : DATA COMMUNICATION AND NETWORKS

PART A

(10 * 1/2 = 5 Marks)

Choose the correct answer

1. The Internet model consists of _____ layers
a) three b) five c) seven d) eight
2. The _____ layer is the layer closest to the transmission medium
a) physical b) data link c) network d) transport
3. Which multiplexing technique transmits digital signals?
a) FDM b) TDM c) WDM d) none of the above
4. Circuit switching takes place at the _____ layer.
a) data link b) network c) physical d) transport
6. _____ codes are special linear block codes with one extra property.
a) Non-linear b) Convolution c) Cyclic d) Non cyclic
7. The data link layer of Ethernet consists of the LLC sublayer and the _____
a) RLC sublayer b) MAC sublayer c) Topology d) LAN Connection
8. The Bluetooth radio layer performs functions similar to those in the Internet model's _____ layer
a) Physical b) Data link c) Session d) Protocol
9. In the _____ approach, each packet is treated independently of all other packets
a) Internet b) Datagram c) TCP/IP d) Both (b) and (c)
10. The process-to-process delivery of the entire message is the responsibility of the _____ layer.
a) network b) transport c) application d) physical

PART – B (5 * 4 = 20 Marks)

Answer ALL Questions
Each answer should not exceed 200 words or one page

- 11.(a) Write short note on Sender, Receiver, and Carrier in data transmission
(OR)
- 11.(b) Discuss how the Logical Addresses are used in Internet
- 12.(a) Explain the fiber optic cable transmission media in brief
(OR)
- 12.(b) Explain briefly about datagram and virtual circuit
- 13.(a) What are types of errors? Explain any two types of errors
(OR)
- 13.(b) Briefly describe the services provided by the data link layer.
- 14.(a) Discuss the Fast Ethernet goals, Topology and Implementations
(OR)
- 14.(b) Explain the addressing mechanism of IEEE 802.11 standard
15. (a) Discuss the protocols which create a mapping between physical and logical addresses.
(OR)
- 15.(b) What are the responsibilities of the transport layer in the Internet model? Explain

PART - C (5 * 7 = 35 Marks)

Answer ALL Questions
Each answer should not exceed 600 words or three page

16. (a) Discuss the layers and their uses in the OSI reference model
(OR)
16. (b) Elaborate the layers in the TCP/IP protocol suite
17. (a) Describe the analog and digital data transmission methods in detail
(OR)
17. (b) Explain the basic concept of frequency division multiplexing and Wavelength-Division Multiplexing
18. (a) Explain the various linear block codes for error detection and correction
(OR)
18. (b) Discuss the Cyclic Redundancy Check and hardware implementation
19. (a) Explain the Bluetooth architecture and layers in detail
(OR)
19. (b) Discuss the functions of the various connecting devices and its functions
20. (a) Discuss the process of Delivery and Forward in network layer
(OR)
20. (b) Explain the following
(i). Congestion Control
(ii). Quality of Services
