



CBCS SCHEME

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16/17MCA31

Third Semester MCA Degree Examination, Dec.2019/Jan.2020 Computer Networks

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Ex the following network devices :
i) Switch ii) Bridge. (04 Marks)
- b. With a neat diagram, explain the functionalities of each layer in the OSI model. (08 Marks)
- c. Show the Manchester and Bipolar (AMI) encoding for the BIT pattern 100110111. (04 Marks)

OR

- 2 a. Compare TCP/IP model with OSI model. (06 Marks)
- b. Consider an image with 1024×768 pixels with 3 bytes/pixel. How long it takes to transmit over 56 Kbps modem channel and over 10 Mbps Ethernet? (06 Marks)
- c. Discuss transmission impairments in computer networks. (04 Marks)

Module-2

- 3 a. Explain with examples, parity check method and checksum method. (06 Marks)
- b. Give any four applications of Bluetooth. (04 Marks)
- c. If data is 1011, find the Hamming code by assuming even parity. If the Hamming code is 1110101. Find the error BIT. (06 Marks)

OR

- 4 a. Consider the generator function $G(x) = x^4 + x + 1$ and data is 1101011010.
i) Find the code word corresponding to the above sequence
ii) If the codeword is having error in 3rd BIT. How does the receiver detect the error? (08 Marks)
- b. With a neat diagram, explain go-back-N and selective repeat protocols. (08 Marks)

Module-3

- 5 a. Describe link state routing. (08 Marks)
- b. Briefly explain the different feedback mechanisms used in traffic throttling congestion control approach. (08 Marks)

OR

- 6 a. Discuss the network layer design issues. (04 Marks)
- b. Explain the distance vector routing protocol and count-to-infinity problem. (08 Marks)
- c. Write a short note on :
i) Hierarchical Routing
ii) Resource Reservation Protocol. (04 Marks)

Module-4

- 7 a. Diagrammatically describe the process for connection establishment and connection release using 3-way handshake protocol. (08 Marks)
b. Discuss IPV4 packet header format along with a neat diagram. (08 Marks)

OR

- 8 a. Explain Real-Time Transport Protocol. (06 Marks)
b. Compare the features of IPV4 and IPV6. (04 Marks)
c. Sketch a neat diagram of UDP header formats and explain. (06 Marks)

Module-5

- 9 a. Discuss the architecture of the e-mail system. (08 Marks)
b. Write a short notes on :
i) Domain Name Servers (08 Marks)
ii) WWW.

OR

- 10 a. Explain the relationship between web proxies and content delivery networks. (08 Marks)
b. Give a brief note on :
i) Streaming audio and video
ii) HTTP built-in methods. (08 Marks)
