

I Semester M.C.A Examination
(Master of Computer Applications)
Computer Networks(20ECAC703)

Duration: 3 hours**Max. Marks: 100**

Note: i) Answer any TWO full questions from UNIT-I, any TWO full questions from UNIT-II and any ONE full question from UNIT-III.

UNIT-I

- 1 a. Define data communication? Explain different transmission modes. (05 marks)
- b. Match the following to one of the 5 TCP/IP layers.
 - I) Reliable process to process data transportation.
 - II) Routing.
 - III) Provides access to the network for end user.
 - IV) Transmission of bit streams across physical medium.
 - V) Responsible for delivery between adjacent nodes. (05 marks)
- c. What do you mean by flow and error control? Explain Go-Back-N protocol with the neat diagram. (10 marks)
- 2 a. Given the bit sequence 1010011110 and a divisor of 1011, find the CRC. Check your answer. (10marks)
- b. What is the need of network model? Explain with neat diagram the TCP/IP model. (10marks)
- 3 a. Differentiate the following: (any 2)
 - I) Circuit switching and Packet switching.
 - II) TDM and FDM.
 - III) FSK and ASK.
 - IV) Digital signal and Analog signal. (06 marks)
- b. Name the different controlled access methods used to access the link by multiple devices and explain any one controlled access method. (06 marks)
- c. What is the need for modulation? Explain the different modulation techniques in brief. (08 marks)

UNIT-II

- 4 a. Answer the following:
 - I) Find the net-id and host-id of the following classful IP addresses.
193.14.56.22 and 65.3.4.250s
 - II) How can we prove that we have 2,747,483,648 addresses in class A?
 - III) Find the class of the following addresses.
11000001 10000011 00011011 11111111 and 227.12.14.87
 - IV) Given the network address 17.0.0.0 , find the class, the block and range of IP addresses.
 - V) Write the default masks of the classful addressing. (10marks)
- b. Explain the distance vector routing with an appropriate example. (10marks)
- 5 a. Answer any 1 of the following. (06 marks)
 - I) Write and explain IPV4 datagram format.
 - II) Write and explain IPV6 datagram format.
- b. Explain any 2 of the following. (06 marks)
 - I) DHCP II) ARP III) NAT(Network Address Translation)

- c. Illustrate the scenario for establishing a TCP connection using 3-way handshake. (08 marks)
- 6 a. Explain in brief the different services provided by the transport layer protocols. (10 marks)
- b. Answer the following. (10 marks)
- I) UDP packet format.
- II) Compare TCP and UDP Protocol.

UNIT-III

- 7 a. Which protocol can be used for fetching web pages? Explain its working with request and response message formats. (08marks)
- b. Explain the services offered by DNS with an example. Explain the iterative and recursive methods used to resolve domain names to IP addresses. (08 marks)
- c. Give the importance of SMTP in electronic mail system. (04 marks)
- 8 a. What is network security? Explain the basic network functionalities in network security. (10marks)
- b. Explain RSA and Diffie Hellman Public Key Cryptography. (10marks)