

Total No. of Questions : 8]

SEAT No. :

PE4290

[Total No. of Pages : 2

[6582]-63

S.E. (Information Technology)
BASICS OF COMPUTER NETWORKS
(2019 Pattern) (Semester-III) (214445)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicates full marks.
- 4) Assume Suitable data if necessary.

- Q1)** a) Draw & Explain the frame format for IEEE 802.3? [6]
b) Explain the various controlled access methods. [6]
c) Discuss CSMA/CD random access technique. How is collision detection achieved in this technique? [6]

OR

- Q2)** a) Explain the following physical layer implementations in standard Ethernet: [6]
i) 10Base5
ii) 10BaseT
iii) 10BaseF
b) Write short notes on: [6]
i) IEEE 802.4 (Token Bus)
ii) IEEE 802.5 (Token Ring)
c) Explain FDMA, TDMA and CDMA in detail. [6]

- Q3)** a) Explain different classes of IP addresses and show by calculations how many networks and hosts are possible in each class? [6]
b) Calculate the following for a network address 192.168.1.0/27 [6]
i) Number of valid subnets
ii) Number of actual hosts per subnet
iii) Network and broadcast address for each subnet
c) Compare between IPv4 and IPv6. [5]

OR

P.T.O.

- Q4)** a) For a given class-C network, design 4 equal subnets having minimum 50 nodes in each sub network. [6]
- b) Explain NAT & CIDR with neat Diagram. [6]
- c) Draw and Explain Header diagram of IPv4. [5]

- Q5)** a) What is routing? State different types of routing. Explain two interior gateway routing protocols. [6]
- b) Compare and contrast the advertisement used by RIP and OSPF Routing protocols. [6]
- c) Explain Optimally Principle with help of example. [6]

OR

- Q6)** a) What is Autonomous System? What are the Inter Domain Routing Protocols? Explain Any one Inter Domain Routing protocols in details. [6]
- b) Differentiate between Distance Vector Routing and Link State Routing. [6]
- c) What is BGP? Explain the operation of BGP with suitable example. [6]

- Q7)** a) Explain duties of transport layer and differentiate between connection oriented and Connection less services. [6]
- b) Draw & Explain Leaky Bucket and Token Bucket algorithm? [6]
- c) Explain Three Way Handshake algorithm for TCP connection establishment. [5]

OR

- Q8)** a) What is a socket? Explain the various socket primitives and types of socket with Example. [6]
- b) Discuss Flow control and Congestion control mechanisms in TCP. [6]
- c) What is Silly Window Syndrome? Explain at least two methods to overcome it. [5]

