Total No. of Questions : 12]

SEAT No. :

P1386

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B.E. (Electronics & Telecommunication)

COMPUTER NETWORK

(2008 Course) (Semester - I) (404183)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Draw ISO-OSI model and explain in brief function of each layer. **[8]**

b) Compare Coaxial Cable, Twisted pair cable and Fibre optic cables. **[6]**

c) Explain in brief physical address, network address and port number. **[4]**

OR

Q2) a) Draw and explain typical cable TV system. How cable video signal and internet data can be send over the same cable. **[8]**

b) What is DSL? Explain any two types of DSL. **[6]**

c) Compare circuit switching and packet switching network. **[4]**

Q3) a) Explain Go Back-N ARQ and Selective Repeat ARQ protocol. **[6]**

b) What is framing concept in Data Link Layer? Explain in details. **[6]**

c) How does token ring LAN operate? **[4]**

OR

Q4) a) Explain the following: **[6]**

i) 1-persistent CSMA

ii) Non-persistent CSMA

iii) P-persistent CSMA

P.T.O.

b) Draw HDLC frame format. Write function of each field. **[8]**

c) Compare the data rates for standard Ethernet, Fast Ethernet, Gigabit Ethernet and Ten-Gigabit Ethernet. **[2]**

Q5) a) What is VLAN? How does it work? Explain with necessary diagram. **[6]**

b) What is Frame Relay? Explain the different frame formats used in frame relay. **[10]**

OR

Q6) a) Write short notes on: **[6]**

i) Gateway

ii) Hub

iii) Routers

b) Explain the functions of different layers in Bluetooth. Also explain the different types of frame formats used in Baseband Layer. **[10]**

SECTION - II

Q7) a) What services are provided by network layer to transport layer? **[6]**

b) Briefly define subnetting. How do the subnet mask differ from a default mask in classful addressing? **[6]**

c) Why is ARP request broadcast but ARP reply unicast? **[4]**

OR

Q8) a) Show the format of typical IP datagram header and explain. **[6]**

b) What are different static routing algorithms? Explain any one in detail. **[6]**

c) What is DHCP? How does it work? **[4]**

Q9) a) Explain the different Quality of Service parameters. Also write about transport layer service primitives. **[6]**

b) Explain connection establishment and connection releasing with respect to transport layer. **[6]**

c) What are the duties of transport layer? List the sevices provided by transport layer to upper layers. **[4]**

OR

Q10)a) Draw TCP header. Explain function of each field. **[6]**

b) How congestion affects network performance? Also explain the difference between flow control and congestion control. **[6]**

c) What is socket address? Explain. **[4]**

Q11)a) Explain Telnet and FTP in detail with respect to server and client communication. **[8]**

b) What is DNS? Explain the components of DNS system. **[6]**

c) What is the function of SMTP and POP-3 protocols in E-mail system? **[4]**

OR

Q12)a) Distinguish between public key and private key algorithm. State the advantages of RSA algorithm. **[8]**

b) What are the main responsibilities of Application layer? Explain in brief. **[6]**

c) What is URL and what are its components? **[4]**