Total No. of Questions : 12] **SEAT No. :**

P1735 **[Total No. of Pages : 3**

[4859]-90

B.E. (Electronics & Telecommunication)

COMPUTER NETWORK

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

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

Instructions to the candidates:

1) ***Answer Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6 from Section-I and Q. 7 or Q. 8, Q. 9 or Q. 10, Q. 11 or Q. 12 from Section-II.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***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 Fiber optic cables. **[6]**

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

Q3) a) Explain Go Back - N ARQ and selective repeat ARQ protocols. **[6]**

b) Draw HDLC frame format. Write function of each field. **[6]**

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

OR

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

i) I-persistent CSMA.

P.T.O.

ii) Non-persistent CSMA.

iii) P-persistent CSMA.

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

c) Compare the data rates for standard Ethernet, Fast Ethernet, Gigabit Ethernet and Ten-Gigabit Ethernet. **[4]**

Q5) a) What is IEEE 802.11? Explain wireless LAN in brief. **[6]**

b) What is the difference between: **[6]**

i) A forwarding port and a blocking port.

ii) Bus backbone and a star backbone.

c) Write a short note on Virtual LANs. **[4]**

OR

Q6) a) Write short notes on: **[8]**

i) Gateway

ii) Hub

iii) NIC

iv) Routers

b) Match the layers in Bluetooth and the Internet model. Explain. **[4]**

c) Distinguish between ATM and Frame Relay. **[4]**

SECTION-II

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

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

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

OR

Q8) a) Draw and explain the IP header in detail. **[6]**

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

c) Why is ARP request broadcast but ARP reply unicast? **[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 services provided by transport layer to upper layers. **[4]**

OR

Q10)a) With the help of TCP header explain the 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 URL and what are its component. **[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 the function of SMTP and POP-3 protocols in E-mail system? **[4]**

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