Total No. of Questions : 8]

SEAT No. :

P3654

[Total No. of Pages : 2

[4859]-1037

B.E. (E & TC)

COMPUTER NETWORKS

(2012 Pattern) (Semester - I)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

Q1) a) Draw OSI reference model and explain functions of data link layer and presentation layer. **[7]**

b) A channel has data rate of 4kbps and propagation delay of 20ms. Calculate the frame size if the channel efficiency is 50%. **[7]**

c) What is backbone network? What are its types? Explain with necessary diagrams. **[6]**

OR

Q2) a) Draw TCP/IP protocol suite. List with example addresses present at every layer. **[7]**

b) Explain flow control in datalink layer. **[7]**

c) Explain Basic service set and Extended service set in WLAN. **[6]**

Q3) a) Compare IPv4 and IPv6. **[6]**

b) List the various protocols giving their significance at network layer. **[6]**

c) Explain the various classes of IP addressing with their respective ranges. Also list the range of private IP addresses and the standard mask for first three classes of IP addresses. **[6]**

OR

P.T.O.

Q4) a) Draw and explain IPv4 frame format. **[6]**

b) Write short note on DHCP. **[6]**

c) Give the classification of commonly used Unicast Routing protocols and explain Distance Vector Routing protocol with an appropriate example. **[6]**

Q5) a) Draw the TCP frame format. Explain the use of flags. **[6]**

b) Explain the reliability, delay, jitter and bandwidth requirements for the internet applications E-mail and video conferencing. **[6]**

c) Explain in brief port numbers and socket address. **[4]**

OR

Q6) a) Explain 3 way/step handshaking for connection establishment and 4 step connection termination. **[6]**

b) Explain the features of Stream Control Transmission Protocol (SCTP). **[6]**

c) Draw and explain UDP frame format. **[4]**

Q7) a) What are the main responsibilities of Application Layer? Explain in brief. **[6]**

b) Explain DNS in Internet. **[6]**

c) Explain the RSA algorithm. Also explain its limitations. **[4]**

OR

Q8) a) Compare symmetric and asymmetric cipher. **[6]**

b) Write short note on electronic mail system. **[6]**

c) Explain the Substitution cipher with its advantages and disadvantages. **[4]**