B.E. Sixth Semester (Information Technology) (C.B.S.)

Computer Networks

P. Pages : 2 **KNT/KW/16/7411**

Time : Three Hours * 0 1 0 0 * Max. Marks : 80

Notes : 1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Enumerate the functions of seven layers of ISO-OSI reference model with the help of block diagram. **8**

b) Define following terms with formula if any. **6**
1) Delay 2) Latency 3) Jitter
4) Packet delivery ratio 5) Throughput 6) Reliability.

OR

2. a) Differentiate between : - **6**
1) Service & Protocol. 2) Bluetooth & WiMAX.

b) Explain 802.11 standard in brief. **4**

c) Describe following Transmission medium. **4**
1) Infrared transmission. 2) Radio Transmission.

3. a) What is framing? Also explain character stuffing in data link layer. **4**

b) Describe a go-back-n protocol the implement flow control as well as error control. It should work correctly for lost or damaged acks. **6**

c) Define piggybacking & its benefit. **3**

OR

4. a) Explain 1-persistence, non-persistence & P-persistence CSMA protocol. **6**

b) There is no acknowledgement mechanism in CSMA/CD, but we need this mechanism in CSMA/CA. Explain the reason. **3**

c) With respect to data-link-layer what is the meaning of following term. **4**
i) Framing ii) Pipe lining
iii) Piggy backing iv) Virtual bit pipe.

5. a) What is the principal of optimality for the routing algorithms? How is it used? **3**

b) What is hierarchical routing? When is it used? **3**

c) Explain the method of choke-packets used for congestion control. **7**

OR

6. a) Explain the classification of IP addressing in brief. Also explain the class less addressing. **5**

b) Classify following IP addresses: - **8**

1) 130.35.54.12
2) 200.36.2.3
3) 245.24.2.8
4) 01110111 11110011 10000000 11011101
5) 11101111 1100000 11110010 00011101
6) 0.0.0.0.
7) 170.40.11.0/24
8) 223.0.0.0

7. a) Explain the various Quality of Service (QOS) parameters used in the transport layer. What is option negotiation? **8**

b) Explain Transport service primitives. **5**

OR

8. a) Write short notes on following terms with respect to Transport layer. **13**

a) Multiplexing b) Crash recovery
c) Concurrency d) Multiplexing

9. a) Explain packet format of BOOTP and DHCP. **7**

b) Describe in brief. **6**

1) FTP and TFTP. 2) DNS in the internet.

OR

10. a) What do you mean by Resolution in DNS? Also explain iterative resolution & Recursive resolution. **7**

b) Write short notes on. **6**

1) Error control. 2) Transition state.
3) Command processing

11. a) Discuss Mobile IP. How addressing is done in mobile IP? Explain the type of agents in it. **7**

b) Explain SSL Architecture in Transport layer security. **7**

OR

12. a) Write short notes on:- **14**

1) Application layer security. 2) Digital Signature.
3) Three phases of Mobile IP. 4) Security of the IP layer IPsec.

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