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

Computer Networks

P. Pages : 2 **TKN/KS/16/7498**

Time : Three Hours * 0 3 6 5 * 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. Due credit will be given to neatness and adequate dimensions.
9. Diagrams and chemical equations should be given wherever necessary.
10. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Explain the OSI Reference model in details with neat sketch. **7**

b) Differentiate between the following:- **7**
i) ISO OSI Model and TCP/IP reference model.
ii) Connection oriented service and connectionless service.
iii) Service and protocol.

OR

2. a) Explain Bluetooth Technology Architecture in details with neat sketch. **5**

b) Define IEEE 802.11 architecture with schematic diagram. **5**

c) Write a short note on WiMAX Technology. **4**

3. a) Generate the CRC code for message M(x) = 1101010101. Given generator polynomial $g(x)=x^4+x^2+1$. **7**

b) Explain various Framing Methods in Datalink layer. **7**

OR

4. a) Explain Distance Vector Routing Algorithm with an example. **6**

b) Explain the following **any two.** **8**
i) Go-Back N ARQ Protocol. ii) Selective Repeat ARQ Protocol.
iii) Slotted ALOHA.

5. a) An address in a block is given as 73.22.17.25. Find the number of addresses in the block, the first address and the last address. **3**

b) A network is divided into four subnets since one of the address in subnet ? Is 141.14.120.77. Find the subnet address ? **4**

c) Explain the following terms: **6**
i) Logical address ii) Physical address
iii) Port number

6. a) Find the net-id and the host-id of the following IP addresses: **4**
i) 114.34.2.8 ii) 132.56.8.6
iii) 208.34.54.12 iv) 251.34.98.5

b) Explain **any two** of the following. **4**
i) IPV_4 ii) IPV_6

c) Explain Hierarchical Routing. **5**

7. a) Explain various transport service primitives. **5**

b) Explain the steps for: - **8**
i) Establishing a connection. ii) Releasing a connection.

OR

8. a) What is socket ? Explain about socket system calls. **4**

b) Explain QOS parameters supported by transport layer. **3**

c) What is crash recovery ? Explain client-server model with neat sketch. **6**

9. a) Explain DHCP packet format and its transition states in details with neat and schematic diagram. **7**

b) Explain the following. **6**
i) FTP connection. ii) TFTP communication.

OR

10. a) Explain Domain name system in details with various Examples. **7**

b) Explain BOOTP protocol pocket format in details. **6**

11. a) Explain following three phases of Mobile IP: **7**
i) Agent Discovery. ii) Registration.
iii) Data Transfer.

b) What is Digital Signature ? Explain various properties of Digital Signature. **6**

12. a) Explain about Application Layer security with PGP. **5**

b) Explain IPSec Two modes operation with neat sketch in detail. **4**

c) Write short note on SSL and TLS protocols. **4**

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