

(b) Write short notes on the following : 10

- (i) DNS
- (ii) TELNET
- (iii) SNMP.



Roll No.

Total Pages : 06

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B.Tech. (CE) (Data Science) (Fourth Semester)

Computer Network (PCC-DS-405/PCC-CS-602)

Time : 3 Hours

[Maximum Marks : 75

Note : It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

Part A

1. (a) What are the advantages of FHSS ? 1.5
- (b) What is a virtual LAN ? 1.5
- (c) What is the vulnerable time in CSMA ? 1.5

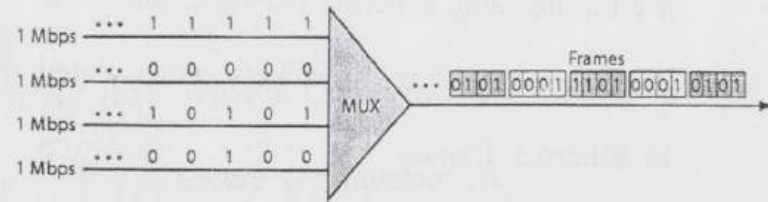
- (d) Explain the p-persistent method of CSMA. 1.5
- (e) Explain the DHCP protocol operation. 1.5
- (f) What are the advantages of UDP protocol ? 1.5
- (g) What is KDC ? 1.5
- (h) What is proxy ARP ? 1.5
- (i) What is a wireless LAN ? 1.5
- (j) What is a firewall ? 1.5

Part B

2. (a) What is the difference between OSI model and TCP/IP model ? 10
- (b) The Advanced Mobile Phone System (AMPS) uses two bands. The first band of 824 to 849 MHz is used for sending and

869 to 894 MHz is used for receiving. Each user has a bandwidth of 30 kHz in each direction. How many people can use their cellular phones simultaneously ? Assume control channels also. 5

3. (a) Figure shows synchronous TDM with a data stream for each input and one data stream for the output. The unit of data is 1 bit. Find : 5
- the input bit duration
 - the output bit duration
 - the output bit rate
 - the output frame rate.



(b) A slotted ALOHA network transmits 200-bit frames on a shared channel of 200 kbps.

What is the throughput if the system (all stations together) produces : **10**

(i) 1000 frames per second

(ii) 500 frames per second

(iii) 250 frames per second.

4. (a) A host with IP address 130.23.43.20 and physical address B2 : 34 : 55 : 10 : 22 : 10 has a packet to send to another host with IP address 130.23.43.25 and physical address A4 : 6E : F4 : 59 : 83 : AB (which is unknown to the first host). The two hosts are on the same Ethernet network. Show the ARP request and reply packets encapsulated in Ethernet frames. **5**

(b) Explain the functionality of the Distance Vector Multicast Routing Protocol. **10**

5. (a) Explain the flow diagram of CSMA/CA. **5**

(b) Describe the following flow control mechanism : **10**

(i) Selective Repeat

(ii) Go back N ARQ.

6. (a) What are the QoS parameters in computer network ? Explain the token bucket technique. **10**

(b) What are the advantages of SCTP protocol ? **5**

7. (a) What is Cryptography ? Explain kerberos for secure communication. **5**