

BT-5/D-21 **45203**
COMPUTER NETWORKS (ELECTIVE)

Paper–OE-IT-T 303A

Time Allowed : 3 Hours]

[Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

UNIT-I

1. (a) Differentiate between LAN, MAN, WAN and wireless networks in terms of working principle / technology, capacity and network diameter. 7
- (b) Explain the functions of all the layers present in OSI reference model. 8
2. (a) Differentiate between 10base5, 10base10, 10-baseT and 100baseFX LAN technologies. 8
- (b) Describe the challenges associated with wireless networks. 7

UNIT-II

3. (a) Draw IP header and describe all the IP header fields. 8
- (b) Discuss the role of ARP, DHCP and DNS protocols. 7
4. (a) What are the features of TCP and UDP protocols? What kind of applications do both of these individually support? 9
- (b) Explain following protocols - SMTP, SNMP and TELNET. 6

UNIT-III

5. (a) Explain various media used in connected devices and computers in computer networks. 6
- (b) What are multiple access protocols? What are the differences between CSMA and ALOHA? 9
6. (a) What do you mean by flow control? Why is it needed? Explain sliding window protocol. 9

- (b) What are different error detection and error correcting methods used in computer networks? Discuss. 6

UNIT-IV

7. (a) Describe the fundamentals behind unicast versus multicast routing protocols. Discuss working of hierarchical routing scheme. 9
- (b) Explain ATM adaptation layer in detail. 6
8. (a) Explain the concept of subnetting in IP. Explain with the help of example the concept of subnet mask. 9
- (b) Discuss the functioning of routing protocol for mobile hosts. 6

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