

Roll No.

Total Pages : 03

GSQ/D-23

1136

COMPUTER NETWORKS
BCA-354

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in **all**, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. Define the following terms :
 - (a) MAC address 3
 - (b) IP address 3
 - (c) Port address and Socket address 2
 - (d) Gateway 2
 - (e) Virtual Circuit 3
 - (f) WiFi. 3

Unit I

2. (a) Define Computer Networks along with its usage, types and applications. 6
- (b) Describe the criteria of selection for network topology. What are different topologies for networking ? Explain each of them in detail. 10

3. (a) Explain TCP/IP network architecture in detail. 8
(b) How does TCP/IP differ from OSI Model ? 8

Unit II

4. (a) What do you mean by transmission impairments ?
Explain all the transmission impairments in detail. 8
(b) How the channel capacity is affected by the transmission impairments ? What is the maximum capacity of noisy and noiseless data communication channel ? 8
5. Differentiate between the following :
(a) TDM vs. FDM vs. WDM 6
(b) Peer to Peer vs. Web Based Networking Models 4
(c) Cable Modem vs. DSL. 6

Unit III

6. (a) List the functions of data link layer. 5
(b) What is collision free media access control protocols ? Explain all sliding window protocols in detail and clean by drawing neat diagrams for each. 11
7. Explain the Frame Formats of the following :
(a) Ethernet 6

(b)	Token Ring	5
(c)	Bluetooth.	5

Unit IV

8. (a) Define routing algorithm and its types. What are the characteristics of good routing algorithm ? Explain flooding in detail. 8
- (b) Explain the elements of Transport Layer protocols in detail. 8
9. (a) What do you mean by secure computer network ? What are the advantages of security in data communication ? Explain. 8
- (b) Explain symmetric key cryptography technique for network security in detail. What are the advantages of asymmetric key cryptography over symmetric key cryptography ? 8