Exam. Code : 105705
Subject Code : 1446

B.Sc. Information Technology 5ᵗʰ Sem.
COMPUTER NETWORKS
Paper–I

Time Allowed—3 Hours]   [Maximum Marks—100

Note :– Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The **fifth** question may be attempted from any section. All questions carry equal marks.

SECTION–A

1. (a) Define : Computer Network. What is client and server in computer network ?

   (b) Discuss various types of network topologies in computer networks. 5,15

2. How many layers are there in the TCP/IP model ? Explain each one. 20

SECTION–B

3. (a) Write short note on : Modem, Pulse Code modulation and Multiplexing.

   (b) Explain the Circuit, Packet and Message switching. 10,10

4. Discuss the following transmission media : Fiber Optics, Co-axial Cable, Twisted pair and Satellite. 20

SECTION–C

5. (a) What is the need of error detection ? Explain various error detecting codes.

   (b) What is the advantage of sliding window protocol ? Explain any one sliding window protocol. 10,10

6. (a) What are the characteristics of a routing algorithm ? Discuss in detail any one routing algorithm.

   (b) What is meant by congestion ? How congestion is controlled in network layer ? 12,8

SECTION–D

7. (a) Explain in detail the design issues of Presentation Layer.

   (b) Define : E-mail. How does E-mail service work at application layer ? 10,10

8. Write short note on : Network Security, Remote login and Internetworking. 10,5,5