

Exam. Code : 105705

Subject Code : 1586

B.Sc. IT 5th Semester

COMPUTER NETWORKS

Paper—I

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt any **five** questions. All questions carry equal marks.

1. Compare OSI reference model with TCP/IP reference model. 20
2. What is network topology ? Discuss the commonly used network topologies by giving their respective advantages and limitations. 20
3. (a) Define : Routers, Bridges, Repeaters and Gateways.
(b) Define Switching. Discuss briefly various types of Switching. 8,12
4. (a) Write briefly on the following : Modem, Multiplexing and Codec.
(b) What is the difference between the following :
 - (i) Analog and digital transmission
 - (ii) Baseband and broadband transmission ?15,5

5. Discuss the following media : Twisted pair, Co-axial cable, Fiber Optical cable and Wireless Transmission. 20
6. (a) What are various error detection and error correction codes ? Discuss each one briefly.
(b) Write briefly on sliding window protocol. 12,8
7. What is Routing ? What are the desirable characteristics of a routing algorithm ? Explain the shortest path routing algorithm with suitable illustration. 20
8. (a) What is Internetworking ? How network layer support internetworking ?
(b) Discuss the main security threats to a network. Why network security is considered important ?
10,10