

M.Sc. (Informatics), Semester-III Examination, December 2017
Paper IT-31-Network Architecture

(Write your Roll No. on the top immediately on receipt of this question paper)

Time: 3 hrs.

MM: 75

Answer any five questions. Question 1 is compulsory.

- Q.1.** a. What is the principal difference between connectionless communication and connection-oriented communication? (3x5)
b. How could you eliminate the multiple-access problem for your Local-Area Network?
c. What is the flow control problem?
d. What are two reasons using layered protocols?
e. What is an IP address? **How a host determines its IP address?**
- Q.2.** What is a network? Define different type of network with suitable example. What type of cabling used in a network? Please give example of at least three types of cables along with their properties. 15
- Q.3.** Explain with a neat sketch, the functions of the protocols used in each layer of the OSI model and illustrate how communication is taking place between two end systems. Discuss role of each layer. 15
- Q.4** a. An alternative to a LAN is simply to have everyone connect to one large, central computer. Give two advantages of a client-server system using a LAN over a single, central machine. 5
b. What is Ethernet? Discuss its characteristics and the topologies where it is used. Discuss these topologies by giving suitable illustrations. 10
- Q.5.** Define and explain the data link layer in IEEE 802 project. Why is this layer divided into sub layers? Describe the function of each sub layer. 15
- Q.6.** Describe the following in brief. (3x5)
i. X.25
ii. V.42bis
iii. Group 4
iv. TCP/IP
v. IEEE 802.3