

INFORMATION TECHNOLOGY

Full Marks: 100

Times: Three Hours

The figures in the margin indicate full marks.

Answer any five of the following questions.

1. What do you mean by Network Topology? Describe various types of Network Topology. How does TCP/ IP work? Describe briefly Repeaters and Hubs. 3 +6 +6+5 = 20

2. What is ARP? Discuss briefly ICMP. Differentiate ARP and ICMP. Write down the main feature of Physical Layer, Data link Layer & Application Layer. Describe three types of IP Addressing with examples. 5 + 6 +6 +3 =20

3. What do you mean by UDP? Differentiate TCP & UDP with applications. What are the advantages of fiber optic cable? Differentiate co-axial cable with twisted pair cable. 5 + 6 + 6 + 3 = 20

4. What is Database Management System? Give an example of Database Management System. Differentiate between Master and Transaction Files with example. Describe three level of architecture in DBMS with examples. 2 + 6 + 6 + 6 =20

5. Describe briefly with examples:

a) Primary & Foreign Key.

b) 3NF

Design an ER Model for University student's database system. Describe the tables of University student's Database System. 7 +10+3 = 20

6. What is normalization? Describe briefly

a) Primary key

b) Transitive Dependency

Show that "All BCNF relation is a strong 3NF, but not every 3NF relation is BCNF". Discuss various types of Normalization technique with proper example. $2 + 4 + 4 + 10 = 20$

7. Write down the short notes on the following:

- a) Network administrator
- b) Merits of Normalization
- c) Database Administration.
- d) NIC

$5 \times 4 = 20$