# Paper Code : CSCHCT 22

**M.Sc. II Semester (CBCS) Degree Examination, Nov./Dec. 2022**
**Subject : COMPUTER SCIENCE**
**Paper : Relational Database Management Systems**
**Paper : HCT 2.2**

Time : 3 Hours Max. Marks : 80

***Instructions :*** *i) Section – **A** is **compulsory**.*
*ii) Answer **any five** questions from Section – **B**.*

SECTION – A

1. a) What are the advantages of database system ? **(10×2=20)**
   b) List characteristics of database approach.
   c) Pictorially represent the database system with its components.
   d) Define schemas.
   e) What is relational constraints ?
   f) What is redundancy ?
   g) What are the properties of transactions ?
   h) What are DDL statements ?
   i) Define functional dependency.
   j) Give example of many to one relationship.

SECTION – B

2. a) List all the DBMS interfaces. menu, form, graphical, 6
   b) Discuss three schema architecture. 6

3. a) *Discuss the following* terms with the help of example. 6
   *i) Entity types*
   *ii) Entity sets*
   *iii) Keys.*
   b) Draw an E-R diagram for company database. 6

P.T.O.

4. a) What is relation ? Explain the following terms with respect to student table.
   i) Domain
   ii) Attributes
   iii) Tuples. 6
   b) Explain aggregate functions of SQL. 6

5. a) Explain insertion, viewing and updating table contents using SQL commands. 6
   b) Explain with example SQL join operation. 6

6. a) Explain the concept of normalization of data. Discuss 1NF and 2NF. 6
   b) What is multivalued dependency (MVD) ? Discuss 4NF. 6

7. a) Explain concurrency control techniques. 6
   b) Explain ACID properties. 6

8. Write a short note on **any two** of the following : (6×2=12)
   i) Distributed database systems
   ii) SQL-commit
   iii) Relational algebra
   iv) Database security.

Paper Code : CSCSCT 21

M.Sc. II Semester Degree Examination, November/December 2022
Subject : COMPUTER SCIENCE
Paper : Data Communications and Networks
Paper : SCT 2.1

Time : 3 Hours

Max. Marks : 80

**Instructions** : i) Section – **A** is **compulsory**.
ii) Answer **any five** questions from Section – **B**.

SECTION – A

**(10×2=20)**

1. a) What is protocol ?
   b) What are the uses of Bridges ?
   c) Describe the features of LAN.
   d) What is routing ?
   e) List the components of data communications.
   f) List any four services of transport layer.
   g) List the drawbacks of simplex protocol.
   h) Mention the advantages of fibre optics.
   i) Define bandwidth and latency.
   j) Define error detection and correction.

SECTION – B

2. a) Define data communication. Explain fundamental characteristics of data communication. **6**
   b) State five basic data communication components and explain their functions. **6**

3. a) What are transmission impairments ? Briefly explain three causes of transmission impairments. **6**
   b) Explain Cyclic Redundancy Check (CRC). Assume the data is 10011 and the code generator is 1001. Calculate CRC bits. **6**

4. a) Discuss about collision free protocols. **6**
   b) Explain the multipath routing algorithm. **6**

P.T.O.

5. a) Explain OSI reference model with a neat diagram. 6

b) What is the role of Address Resolution Protocol (ARQ) ? Explain its operations. 6

6. a) Explain IP addressing methods. 6

b) Explain the concept of congestion control protocol. 6

7. a) Explain the concept of WWW. 6

b) What are the two parts of addressing system in SMTP ? 6

8. Write a short note on : (3×4=12)

a) UDP

b) Stop and wait

c) HDLC.