

S-721

Total Pages : 4

Roll No. -----

MSCIT-14

Advanced DBMS

(MCA/MSCT)

3rd Semester, Examination 2022(Dec.)

Time: 2 Hours

Max. Marks: 70

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section – A

(Long Answer – type questions)

Note: Section 'A' contains Five (05) long-answer-type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

[2 x 19 = 38]

P.T.O.

- Q.1. What are the data models? Compare and contrast network, hierarchical and relational data model.
- Q.2. What is ER diagram? Draw E-R diagram for any of the following two organization:
- a) Public Library
 - b) Hospital, after determining the entities of interest and relationships that exist between these entities.
- Q.3. What is Generalization? Differentiate disjoint and overlapping generalization with suitable example.
- Q.4. What is Transaction? Briefly describe the ACID properties of the transaction. Classify that which problem is caused by the violation of which property of transaction in concurrent environment.
- Q.5. Consider the following tables:
- Employee (Emp_Number, Emp_Name, Emp_City)
- Company (Emp_Number, Company_Name, Salary)

Write SQL statements for the following:

- a) Write a SQL query to display Employee Name and Company name.
- b) Write a SQL query to display Employee Name, Employee City, Company Name and Salary of all the employees whose salary > 10000
- c) Write a query to display all the Employees working in 'XYZ' company.

Section – B

(Short-answer-type questions)

Note: Section 'B' contains Eight (08) short-answer-type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.

[4 x 8 = 32]

- Q.1. What is Database Management system? Explain the role of Database administrator in an Organization.
- Q.2. Explain Centralized and Client server architecture of DBMS.

P.T.O.

- Q.3. Suppose a University has many programmes. A student can enroll only one of these programme as full time or part time student. Create an EER diagram for the above. Make suitable assumptions. Convert the EER diagram into suitable relations.
- Q.4. Justify "Any relation who is in BCNF is in 3NF but converse is not true."
- Q.5. What do you mean by deadlock in DBMS? How can you detect a deadlock? Suggest a technique that can be used to prevent it.
- Q.6. Explain the two-phase locking techniques for concurrency control.
- Q.7. What is multilevel security? What are typical security levels?
- Q.8. Write short notes on:
- a) Triggers
 - b) Spatial database
 - c) Unions
 - d) Intersections
