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Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (IT) (Sem-2)
DATABASE MANAGEMENT SYSTEMS
Subject Code : UGCA-1922
M.Code : 77654
Date of Examination : 02-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :
 - a) What are the different types of languages that are available in the DBMS?
 - b) What are the main differences between Primary key and Unique key?
 - c) What is the concept of sub-query in terms of SQL?
 - d) What is E-R model in the DBMS?
 - e) Difference between alter and update.
 - f) What is the different type of relationships in the DBMS?
 - g) Do we consider NULL values the same as that of blank space or zero?
 - h) What is the meaning of cursor?
 - i) Explain the terms specialization and generalization.
 - j) What is Distributed database?

SECTION-B

2. What are the different types of keys in the database? Out of these keys which one are used in Normalization. Explain any two normal forms using keys.
3. **Consider the Sailors-Boats-Reserves Database given below with name and fields :**

s (sid, sname, rating, age)

b (bid, bname, color)

r (sid, bid, date)

Write each of the following queries in SQL alongwith the explanation for each.

- a) Find all sailor id's of sailors who have a rating of at least 8 or reserved boat with id 103.
 - b) Find the sailor id's of sailors with age over 20 who have not reserved a boat whose name includes the string "thunder".
 - c) Find the sailor id's of sailors whose rating is better than some sailor called Bob.
 - d) Find the colors of boats reserved by Albert.
4. What are indexes? Mention the differences between the clustered and non-clustered index
 5. Consider Dean Academic Affairs (DAA) office of your institute that maintains data about the following entities : (a) courses, including number, title, credits, syllabus, and prerequisites; (b) course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom; (c) students, including student-id, name, and program; and (d) instructors, including identification number, name, department, and title. Further, the enrolment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled. Construct an E-R diagram for the DAA office. Document all assumptions that you make about the mapping constraints. Can we have a weak entity in the given scenario?
 6. Explain the three-schema architecture of DBMS with the help of a diagram.
 7. How database recovery is maintained in DBMS. Give a scenario and explain in detail.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.