BCA (Sem–4)

DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination : 23-05-2024

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. Answer briefly :

    i)   What are the different types of languages that are available in the DBMS?

    ii)   Explain the concepts of a Primary key and Foreign Key.

    iii)   Why is the use of DBMS recommended? Explain by listing some of its major advantages.

    iv)   What are the main differences between Primary key and Unique Key?

    v)   What is the concept of sub-query in terms of SQL?

    vi)   Explain Entity, Entity Type, and Entity Set in DBMS.

    vii)   What is E-R model in the DBMS?

    viii)   What are the different type of relationships in the DBMS?

    ix)   Explain the terms specialization and generalization.

    x)   What is DKNF?

SECTION-B

2. What are indexes? Mention the differences between the clustered and non-clustered index.

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

   (i)   Find all sailor id's of sailors who have a rating of at least 8 or reserved boat with id 103.

   (ii)   Find the sailor id's of sailors with age over 20 who have not reserved a boat whose name includes the string "thunder".

   (iii) Find the sailor id's of sailors whose-rating is better than some sailor called Bob.

   (iv)   Find the colors of boats reserved by Albert.

4. UPS prides itself on having up-to-date information on the processing and current location of each shipped item. To do this, UPS relies on a company-wide information system. Shipped items are the heart of the UPS product tracking information system. Shipped items can be characterized by item number (unique), weight, dimensions, insurance amount, destination, and final delivery date. Shipped items are received into the UPS system at a single retail center. Retail centers are characterized by their type, unique ID, and address. Shipped items make their way to their destination via one or more standard UPS transportation events (i.e., flights, truck deliveries). These transportation events are characterized by a unique schedule Number, a type (e.g., flight, truck), and a delivery Route. Please create an Entity Relationship diagram that captures this information about the UPS system. Be certain to indicate identifiers and cardinality constraints. https://www.ptustudy.com

5. How database recovery is maintained in DBMS? Give a scenario and explain in detail.

6. What is concurrency management? Explain 2P in detail.

7. Explain join dependency and how they are maintained?

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

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