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B.M.S. COLLEGE FOR WOMEN, AUTONOMOUS
BENGALURU – 560004
SEMESTER END EXAMINATION – SEPTEMBER 2023

B.C.A – 2nd Semester

DATABASE MANAGEMENT SYSTEM
(NEP Scheme 2021-22 onwards F+R)

Course Code: BCA2DSC06

Duration: 2 ½ Hours

QP Code:2034

Max. Marks: 60

Instruction: Answer all the sections.

I. Answer any TEN questions. Each question carries TWO marks: (10X2=20)

1. What is a database schema?
2. Define Entity and Entity sets
3. Define Data Independence.
4. Differentiate Primary and Foreign Key.
5. Write a query to create a constraint for the table Orders(OrderID, Status, OrderDate).
6. What is projection? Give an example.
7. Mention the properties of a Database Transaction.
8. Differentiate between DROP and TRUNCATE
9. Define a) Tuple b) Domain
10. What are the different datatypes used in SQL?
11. What is normalization?
12. What is cardinality of a relation. Give an example

II. Answer any SIX questions. Each question carries FIVE marks (6X5=30)

13. Explain three schema architecture of DBMS
14. Suppose you are given the following requirements for a simple database for the Karnataka Hockey League (KHL):
 - The KHL has many teams
 - Each team has a name, a city, a coach, a captain, and a set of players,

- Each player belongs to only one team,
- Each player has a name, a position (such as left wing or goalie), a skill level, and a set of injury records,
- A team captain is also a player,
- A game is played between two teams (referred to as host_team and guest_team) and has a date (such as June 5th, 2023) and a score (such as 3-2).

Construct an ER diagram for the KHL database.

15. Write a note on aggregative functions of SQL with an example.

16. Describe different Transaction states with a diagram.

17. Consider the below relation

STUDENT (USN, Name, Stream, Gender)

RESULT (USN, Marks1, Marks2, Marks3)

Write the SQL query for the following.

a. Create the tables as mentioned above with constraints and insert 5 appropriate records to get the results for the below query

b. Add Total, Average to the RESULT table

c. Calculate the total marks and average.

d. Query to find the second highest total marks

18. Explain Characteristics of database approach.

19. What is join? Explain Different types of Joins.

20. Imagine you are a DBA and let us know how would you handle the catastrophic failures.

III. Answer any ONE questions. Each question carries TEN Marks

(1X10=10)

21. Explain the concept and types of indexing in DBMS with examples

22. Explain different types of Normalization with examples

23. a. Explain two-phase locking techniques (7)

b. Describe is the need of concurrency control. (3)
