MDS505 2078 ✡

Tribhuvan University
Institute of Science and Technology
2078
✡

Master Level / I Year /First Semester/ Science
Data Science (MDS 505)
(Data Base Management Systems)

Full Marks: 45
Pass Marks: 22.5
Time: 2 hours

Candidates are required to give their answers in their own words as for as practicable.
Attempt All Questions

Group A

(5×3=15)

1. Differentiate between DDL, DML, and DCL.
2. What is Embedded SQL? Provide an example.
3. Explain Armstrong's axioms of functional dependencies.
4. Highlight on the desirable properties of transactions.
5. Briefly explain spatial database.

Group B

(5×6=30)

6. Draw ER diagram for online voting system. Make necessary assumptions.
7. Explain B-tree Index files.
8. Perform Normalization on the following relation.

ID	CODE	SALARY	PROJECT MANAGER	PLACE
1	2	10000	P1	KTM
2	1	20000	P4	BKT
3	2	30000	P3	BKT
1	4	10000	P2	PTN

9. Explain the concept of recoverable, cascade less, and strict schedule.

OR

Which of the following schedule is (conflict) serializable? For each serializable schedule, determine the equivalent serial schedules.

i) r1(x):w1(x):r2(y):w2(y)
ii) r1(y):r2(y):r3(y):w2(y):w1(y):w3(y)

10. Explain different types of RAID.

OR

Differentiate between classification and clustering. Explain any one clustering algorithm.

Tribhuvan University
Institute of Sciences and Technology
SCHOOL OF MATHEMATICAL SCIENCES
First Assessment 2078

Subject: **Data Base Management System**
***Course No*: MDS 503**
***Level*: MDS /I Year /I Semester**

Full Marks 45
Pass Marks 22.5
***Time*: 2 hrs**

Candidates are required to give their answer in their own words as far as practicable.

Attempt *ALL* Questions.

Group A [5 × 3 = 15]

1. What is weak entity and weak relation? Explain with an example.
2. Differentiate between total participation and partial participation.
3. Why Normalization is carried out?
4. Differentiate between logical design and physical design.
5. Explain different types of cardinalities.

Group B [5 × 6 = 30]

6. Justify why database management system is efficient than file management system.
7. Find Attribute Closure of the following relation

STU_ID	NAME	Age	FACULTY	ADDRESS
1	Bikash	20	Computer	Kathmandu
2	Anju	21	Electronics	Patan
3	kiran	22	computer	Bhaktapur
4	Anju	23	Computer	Patan

8. Convert the given relation to 3 NF.

ID	ROLL	HOSTEL ROOM	FACULTY	PRICE
1	1	112	Computer	1000
2	1	113	Electronics	2000
3	2	112	Data Science	1000
1	3	114	Data Science	5000

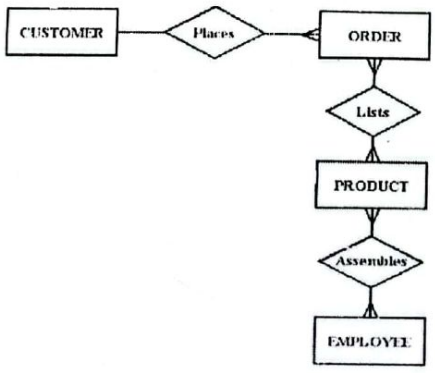
OR

Explain different types of Integrity constraints.

9. Draw ER diagram for online examination system. Make necessary assumptions.

OR

Assume attributes of CUSTOMER, ORDER, PRODUCT and Employee with required primary key. Convert the ER diagram to relational model.



10. Explain Armstrong's axioms of functional dependencies

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