

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
 TEST -1 EXAMINATION- 2024
 B.Tech-III Semester (CSE/IT)

COURSE CODE(CREDITS):18B11CI313 (3)

MAX. MARKS: 15

COURSE NAME: Database Management Systems

COURSE INSTRUCTORS:Pardeep, Ekta, Nishant & Pankaj

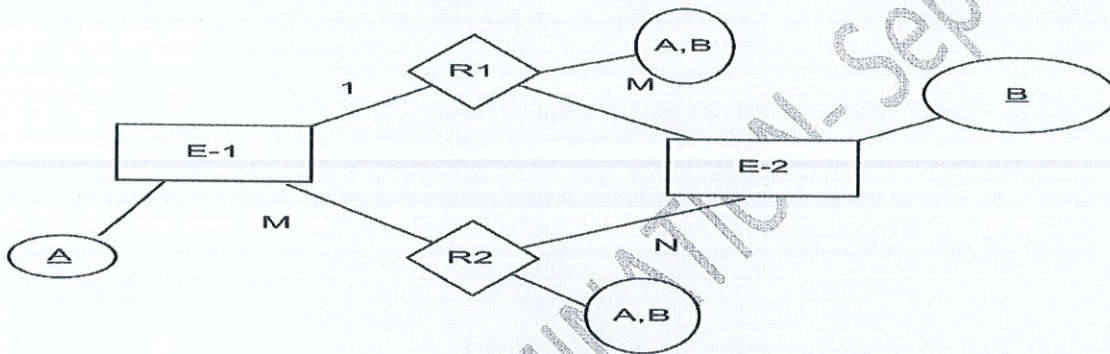
MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

1. Consider the two schema E-1(A) & E-2 (B) and relationship schema R1 & R2. The Entity Relationship diagram is given as under:



- What would be the primary key in R1 and R2 relationships sets?
- What is the minimum number of tables required to represent this ER diagram into relational model?
- Write the relation names in your result of part b.

[CO-3] [1+2+1]

2. Consider the E-R diagram having the entity sets Employee (E-id, E-Name, Age), Department (D-id, Dname, Location) and relationship set Works given as under:



Consider the cardinality of relationship as

- One to one
- One to many
- Many to one
- Many to many

PTO

What would be the primary key of relationships set in each of the above-mentioned cardinalities?

[CO-3] [1+1+1+1]

3. Consider the query "Find the name of employee who worked in a department having location same as the address" on following entity sets Employee and Department.

Employee:

E-No	E-Name	Address
1	Ram	Delhi
2	Varun	Chandigarh
3	Ravi	Chandigarh
4	Amit	Delhi

Department:

D-No	Location	E-No
D1	Delhi	1
D2	Pune	2
D3	Patna	4

- Write the above given query in relational algebra form.
- What would be the output of the query when executed on the above relations?
- Show how you got your output in part b in terms of cross product of the given relations Employee and Department

[CO-2] [1+1+2]

4. Consider student and employee entity sets given as under

Student:

Roll-No	Name	Address
1	A	Delhi
2	B	Mumbai
3	A	Chandigarh

Course :

Emp_No	Name	Roll_No
C1	DBMS	1
C2	Networks	2

Now answer which of the following insertion, deletion and updation will cause the integrity constraints violations:

- Insertion of tuple "1,K,Waknaghat" in Student table.
- Insertion of the tuple "C3, Networks, 4)" in Course table.
- Deletion of tuple "2,B,Mumbai" from table Student table
- Deletion of tuple "C2,Networks, 2" from Course table
- Updation of 2nd tuple in student table
- Updation in the address attribute of Roll_No 3 in Student table

[CO-1] [0.5x6=3]