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18
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B.Tech (5th sem) Class Test, Sept 2023
Database Management Systems (CS3102)

F. M. = 20

Time - 30 minutes

Answer all questions

1. Capacity to alter database schema at one level without altering any other schema level is classified as

- (a) data mapping
- ☒ (b) data independence
- (c) data dependence
- (d) data transformation

✓
2

2. Collection of information stored in a database at a particular moment is:

- (a) view
- (b) schema
- ☒ (c) instance
- (d) none of the above

✓
2

3. Consider a B+-tree in which the maximum number of keys in a node is 5. What is the minimum number of keys in any non-root node?

- a) 1 b) 2 ☒ c) 3 d) 4

✓
10

4. Let M and N be two entities in an E-R diagram with simple single value attributes. R1 and R2 are two relationships between M and N, where as R1 is one-to-many and R2 is many-to-many. What is the minimum number of tables required to represent M, N, R1 and R2 in the relational model?

- a) 4 b) 6 c) 7 ☒ d) 3

✓
2

5. Given the basic ER and relational models, which of the following is INCORRECT?

- a) An attribute of an entity can have more than one value
- b) An attribute of an entity can be composite
- ☒ c) In a row of a relational table, an attribute can have more than one value
- d) In a row of a relational table, an attribute can have exactly one value or a NULL value

✓
2

unit of program execution that access

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6. Consider the following table:

Employee	Department	OT_allowance
RAMA	Mechanical	5000
GOPI	Electrical	2000
SINDHU	Computer	4000
MAHESH	Civil	1500

What is the output of the following SQL query?

select count(*) from ((select Employee, Department from Overtime_allowance) as S
natural join (select Department, OT_allowance from Overtime_allowance) as T);

- a) 16 ☒ b) 4 c) 8 d) None of the above

✓
2

7. Given the relations employee (name, salary, dept-no), and department (dept-no, dept-name, address)
Which of the following queries cannot be expressed using the basic relational algebra operations (σ , π , \times , \cup)

- (a) Dept address of every employee (b) Employees whose name is the same as their dept name
☒ (c) The sum of all employees' salaries (d) All employees of a given department

✓
2

8. Fill in the blank:

If we wish to grant a privilege and to allow the recipient to pass the privilege on to other users, we append
the _____ clause to the appropriate grant command.

WITH GRANT

✓
2

9. Write SQL code for granting 'Select' privileges to all the users.

grant select
on customer
to public;

GRANT SELECT
ON CUSTOMER
TO PUBLIC;

2

10. Which of the following is used to delete the entries in the referenced table when the tuple is deleted in
course table?

- a) Delete ☒ b) On Delete cascade c) Set null d) All of the mentioned

✓
2