

Q.P. Code : 758702

(2 ½ Hours)

[Total Marks: 75

- N.B.** 1) All questions are **compulsory**.
2) **Figures** to the **right** indicate marks.
3) **Draw** suitable **diagrams** and illustrations **wherever necessary**.
4) **Mixing** of sub-questions is **not allowed**.

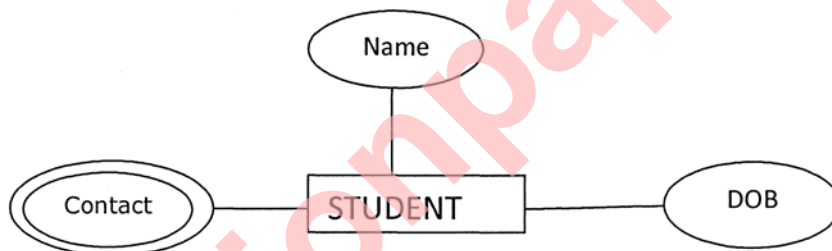
Q.1 Attempt All Questions

(15M)

(a) **Multiple Choice Questions**

[05]

- i) In the architecture of a database system external level is the
a. Physical level.
b. Logical level.
c. Conceptual level
d. View level.
- ii) In the figure given below identify the multivalued attribute



- a. Name
b. Student
c. DOB
d. Contact
- iii) is a minimal set of attributes whose values uniquely identify an entity in the set.
a. Primary key
b. attribute
c. entity
d. foreign key
- iv) What will be output of calling function ROUND(8.4999, 0)?
a. 8
b. 9
c. Both a and b
d. None of the above

[TURN OVER

- v) Which of the following clause is mandatorily used in a sub-query?
- SELECT
 - WHERE
 - ORDER BY
 - GROUP BY

(b) **Fill in the blanks** [05]

- In an ERD diagram rectangle represent _____.
- If every non-key attribute is functionally depend on the primary key, the relation will be in _____ Normal form.
- In relational algebra, to finds all the tuples that are present in r but not in s, we write it as _____.
- Syntax of creating view is _____.
- Output of *SELECT sqrt(25);* is _____.

(c) **Short Answers** [05]

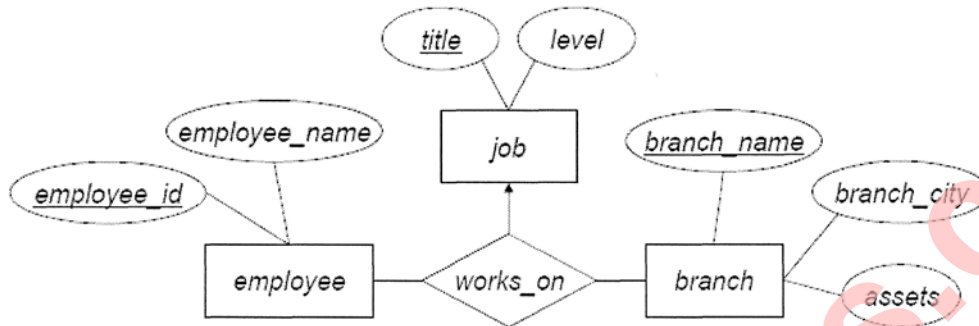
- What is Schema?
- What is mean by Logical Data Independence?
- Which symbol is used in relational Algebra for projection?
- State the syntax of selecting all column from table1.
- Write a query to retrieve month from the date '2016-10-06'.

Q. 2 Attempt the following (Any THREE) (15M)

- Define DBMS. State and explain in brief advantages of DBMS.
- Write a short note on entities vs attributes.
- State and explain types of attributes with their notations.
- Describe following in short with respect to Relational data model:
 - Domain
 - Attributes
- State and explain types of level of abstraction in Database management system.

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(f) Convert following ERD into its table form.



Q. 3 Attempt the following (Any THREE)

(15M)

- Write a short note on first normal form.
- Explain 'select' operation of relational Algebra.
- Briefly explain with the help of example how Union and Intersection work in Relational Algebra.
- Explain with proper illustration 'Between clause' in MySQL.
- Write a query to perform following operations:
 - Create a table Student with id as a primary key, name as unique key and marks column.
 - Insert a record in it.
 - Modify the existing table by adding a column course to the given table.
 - Add value for existing records for the newly inserted column.
 - Delete the table.
- State and explain aggregate functions.

Q. 4 Attempt the following (Any THREE)

(15M)

- Explain the following functions with example.
 - lower
 - replace
 - abs
 - pow
 - reverse

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- (b) Write output for following functions:
- i) `SELECT CONCAT('Hello', MY, 'QL');`
 - ii) `SELECT 'ALL' 'My' 'STUDENTS';`
 - iii) `SELECT RIGHT('HELLOALL', 3);`
 - iv) `SELECT LEFT('HELLOALL', 2);`
 - v) `SELECT mod(5,2);`
- (c) Describe left outer join with suitable example.
- (d) Elaborate on different types of subqueries.
- (e) What is DBA stands for? Explain role of DBA in Database protection.
- (f) Write a MySQL query to create and drop user with and without privileges.

Q. 5 Attempt the following (Any THREE) (15M)

- (a) Explain Generalization using diagrammatic representation.
 - (b) Briefly explain lossless join decomposition.
 - (c) What are views? State advantages of using views.
 - (d) Elaborate on characteristics of relations.
 - (e) Write a short note on nested subqueries.
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