QP CODE: 24800328

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Reg No : .....

Name : .....

M.C.A. DEGREE EXAMINATION, JANUARY 2024

First Semester

Faculty of Technology & Applied Science

Master of Computer Application

CORE - MCACT105 - DATABASE TECHNOLOGY AND NOSQL

2020 Admission Onwards

FEACDBFF

Time: 3 Hours Maximum: 75 Marks

Part A

*Answer any **ten** questions*

*Each question carries **3** marks*

1. What is a data dictionary?
2. What do you mean by physical database design?
3. Define entity and entity set. Give examples.
4. Briefly write about degree of a relation by finding out the degree in the relation given below.
   EMPLOYEE (EMP_NO, NAME, ADDRESS, PHONE and AGE, DESIGNATION)
5. Summarize the Integrity Constraint in detail.
6. How can we translate weak entity sets?
7. What are Data Manipulation Languages Commands in SQL?
8. Explain First Normalization with an example.
9. List the advantages of Steal- No Force Approach.
10. What is the difference between Replication and Fragmentation?
11. Describe Map-Reduce method.
12. List Advantages and Disadvantages of Replication.

(10×3=30 marks)

Part B

*Answer **all** questions*

*Each question carries **9** marks*

13. a) Illustrate Relationships,Relationship sets and mapping cardinalities.

OR

b) Draw an ER diagram for an airport database. Specify the key and participation. constraints for each entity and relationship set.

14. a) Explain the relational Model with example.

OR

b) What are relational models? Specify the rules involved in converting ER model to relational model?

15. a) Discuss Complex integrity Constraints,triggers and views in SQL with Example.

OR

b) What is normalization?Explain first,Second and third normal Forms with suitable example.

16. a) What is a Transaction? Explain the various states of a Transaction.

OR

b) Briefly describe and compare the Client-Server, Collaborating Server, Middle Ware architectures in Distributed DBMS.

17. a) Compare and Contrast different types of NoSQL databases.

OR

b) Explain Replication in NoSQL.

(5×9=45 marks)