

Roll No. : .....

Total No. of Questions : 11 ]

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# **PDCA–392**

## **Post-Graduate Diploma in Computer Application Examination, 2021**

Paper - PGDCA-103

**(Database Management)**

*Time : 1½ Hours ]*

*[ Maximum Marks : 50*

**Section–A**

**(Marks : 2 × 10 = 20)**

*Note* :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

**Section–B**

**(Marks : 3 × 5 = 15)**

*Note* :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

**Section–C**

**(Marks : 5 × 3 = 15)**

*Note* :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

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**Section–A**

2 each

**Note** :- Answer all questions. Answer should not exceeds **50** words in each question.

1. (i) What are Data, Database and DBMS ?
- (ii) Explain Unary, Binary, and Ternary Relationship.
- (iii) Describe super key and candidate key.
- (iv) Explain aggregate functions with an example.
- (v) What do you mean by Cursors ?
- (vi) Give the advantages of SQL.
- (vii) What is normalization and why is it used ?
- (viii) What are different transaction states ?
- (ix) Define Data warehouse.
- (x) What is concurrency control ?

**Section–B**

3 each

**Note** :- Answer all questions. Answer should not exceed **200** words in each question.

Each question has internal choice.

2. Explain different types of Data Models with an example.

*Or*

Give overall system structure of DBMS and explain function of each component.

3. Describe the various types of join operations.

*Or*

How select ( $\sigma$ ) operation is different from project ( $\pi$ ) operation ?

4. Explain select, insert, update and alter command with an example.

*Or*

What do you mean by Nested Queries ? Explain with an example.

5. Define Transaction and its ACID properties.

*Or*

What do you mean by serializability of schedules ? Explain with suitable example.

6. Explain the time stamp ordering used for concurrency control.

*Or*

Explain Two-phase locking techniques.

**Section-C**

5 each

*Note* :- Answer any *three* questions out of five.

7. What is the role of E-R model in Database design ? Draw an E-R diagram for bank management system.

8. Describe set operators of Relational Algebra.

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9. What do you mean by stored procedure and trigger ? Give an example how these are useful ?
10. Define BCNF. How does it differ from 3NF ? Why is it considered a stronger form of 3NF ?
11. What is Deadlock ? When does it occur ? How is it detected in Database System ?  
How can it be avoided ? Discuss in detail.