Roll No. ....

E–539

M. Sc. (Second Semester) (Main)
EXAMINATION, May-June, 2021

COMPUTER SCIENCE

Paper First

[Advance RDBMS (SQL Programming with Oracle)]

Time : Three Hours]   [*Maximum Marks : 100*

Note : Attempt all Sections as directed.

Section—A   1 each

(Objective/Multiple Choice Questions)

Note : Attempt all questions.

Choose the correct answer :

1. A network schema :

    (a) stores data in tables

    (b) restricts the structure to a one-to-many relationship

    (c) permits many-to-many relationships

    (d) None of the above

P. T. O.

2. Administrative supervision of database activities is the responsibility of the :

    (a) DB Manager

    (b) DP Manager

    (c) VP-DP administration

    (d) Database administration

3. An entity set that does not have sufficient attributes to form a primary key is termed as a :

    (a) strong entity set

    (b) variant set

    (c) weak entity set

    (d) variable set

4. The language that requires a user to specify the data to be retrieved without specifying exactly how to get it is :

    (a) Procedural DML

    (b) Non-Procedural DML

    (c) Procedural DDL

    (d) Non-Procedural DDL

5. Relational algebra does not have :

    (a) select operator

    (b) project operator

    (c) aggregation operator

    (d) division operator

6. The minimal set of super key is called :

   (a) primary key

   (b) secondary key

   (c) candidate key

   (d) foreign key

7. Multi-valued dependencies helps to eliminate some forms of :

   (a) Redundancy

   (b) Isolation

   (c) Atomicity

   (d) Inconsistency

8. A query in the tuple relational calculus is expressed as :

   (a) $\{t(pc)|t\}$

   (b) $\{p(+)|t\}$

   (c) $\{t/p)|(t)\}$

   (d) All of the above

9. To check whether X (a set of one or more attributes) is a candidate key of relation R, we need to find.........of X.

   (a) canonical cover

   (b) closure

   (c) minimal cover

   (d) None of the above

10. If $X \rightarrow Y$, then $X \rightarrow Y$ and $X \rightarrow Z$ is :

    (a) Composition Rule

    (b) Reflexivity Rule

    (c) Union Rule

    (d) Decomposition Rule

11. Which of the following statements is true ?

    (a) TRUNCATE free the table space while DELETE does not.

    (b) Both TRUNCATE and DELETE free the table's space.

    (c) Both TRUNCATE and DELETE does note free the table's space.

    (d) DELETE free the table space while TRUNCATE does not.

12. Which of the following is the correct order of a SQL statement ?

    (a) Select, group by, where, having

    (b) Select, where, group by, having

    (c) Select, having, group by, where

    (d) Select, where, having, group by

13. Which operator is used to compare the NULL values in SQL ?

    (a) Equal (=)

    (b) in

    (c) is

    (d) None of the above

14. To get the server output result and display it into the screen, you need to write :

    (a)   set serveroutput on

    (b)   set serveroutput on

    (c)   set dbmsoutput on

    (d)   set dbms output on

15. What is the purpose of triggers ?

    (a)   Enforcing referential integrity

    (b)   Synchronous replication of tables

    (c)   Preventing invalid transactions

    (d)   All of the above

16. Which statement is used to terminate a PL/SQL loop ?

    (a)   KILL

    (b)   GOTO

    (c)   EXIT WHEN

    (d)   CONTINUE WHEN

17. Which of the following are the features of PL/SQL ?

    (a)   It offers extensive error checking

    (b)   It offers numerous data types

    (c)   It offers a variety of programming structures

    (d)   All of the above

18. A technique for direct search is :

    (a)   binary search

    (b)   linear search

    (c)   tree search

    (d)   hashing

19. A transaction manager is which of the following ?

    (a)   maintains a log of transactions

    (b)   maintains before and after database images

    (c)   maintains appropriate concurrency control

    (d)   All of the above

20. A relationship should be specified how in the ODL ?

    (a)   One direction starting with the first class

    (b)   One direction starting with the second class

    (c)   Neither direction

    (d)   Both direction

Section—B 2 each

(Very Short Answer Type Questions)

Note : Attempt all questions.

1.   What is data independence ?

2.   Define strong and weak entity set.

3.   Define relational algebra.

4. What is functional dependency ?

5. Write the syntax (format) of create command in SQL.

6. Write the syntax (format) of insert command in SQL.

7. Define Exception in PL/SQL.

8. What is package in PL/SQL ?

9. What is AVL tree ?

10. Define B-tree.

Section—C 3 each

(Short Answer Type Questions)

Note : Attempt all questions.

1. Explain the types of data models.

2. Describe various types of database languages.

3. What are various join operators ? Explain.

4. What do you understand by nested sub-queries ? Explain with suitable example.

5. Describe various aggregate functions used in SQL.

6. What is view in SQL ? How to create view ? Explain with example.

7. How to insert and fetch data into PL/SQL table ? Explain.

8. What is cursor ? Describe cursor attributes.

9. What are the uses of B^+ tree ? Explain.

10. Describe OODBMS architecture.

P. T. O.

Section—D 6 each

(Long Answer Type Questions)

Note : Attempt all questions. Word limit 150 words.

1. Explain the concept of generalization, specialization and inheritance in E-R-model.

2. What is Normalization ? Describe 1NF, 2NF and 3NF with suitable example.

3. Write short notes on the following :

   (i) integrity constraints

   (ii) data types in SQL

4. What are the various control statements used in PL/SQL ? Explain with example.

5. Explain the following points in object oriented database :

   (i) Object structure

   (ii) Constructor

   (iii) Encapsulation

   (iv) Inheritance.

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