EXAMINATION PAPER

FACULTY	**:**	**COMPUTER SCIENCE AND MULTIMEDIA**		
COURSE	**:**	**BACHELOR OF INFORMATION TECHNOLOGY (HONS)**		
YEAR/ SEMESTER	**:**	**SECOND YEAR / SEMESTER FOUR**		
MODULE TITLE	**:**	**RDBMS WITH SQL**		
CODE	**:**	**BIT 245**		
DATE	**:**	**25 – SEPTEMBER, 2019, WEDNESDAY**		
TIME ALLOWED	**:**	**3 HOURS**		
START	**:**	**1:00 PM**	**FINISH**	**: 4:00 PM**

Instruction to candidates

1. This question paper has THREE (3) Sections.
2. Answer **ALL** questions in Section A, MCQ.
3. Answer **5** questions in Section B, MSAQ.
4. Answer **2** questions in Section C, MEQ.
5. No scripts or answer sheets are to be taken out of the Examination Hall.
6. For Section A, answer in the OMR form provided.

Do not open this question paper until instructed

(Candidates are required to give their answers in their own words as far as practicable)

SECTION A
Multiple Choice Questions
Attempt All Questions **[30×1=30]**

1. **Which of the following represent a relationship among a set of values?**
   A. Row
   B. Table
   C. Field
   D. Column

2. **Ensuring properties of atomicity and durability is responsibility of:**
   A. Data manager
   B. Recovery manager
   C. Transaction manager
   D. Buffer manager

3. **A Database Management System (DBMS) is:**
   A. Collection of interrelated data
   B. Collection of programs to access data
   C. Collection of data describing one particular enterprise
   D. All of the above

4. **Transaction manager consists of:**
   A. Concurrency control manager
   B. Recovery manager
   C. Queue manager
   D. Both ‘A’ and ‘B’

5. **Ensuring consistency among multiple transactions of database is responsibility of:**
   A. Transaction manager
   B. Concurrency control manager
   C. Database manager
   D. Queue manager

6. **Which is the correct syntax for BETWEEN operator?**
   A. WHERE column_name BETWEEN (value1 AND value2)
   B. WHERE column_name BETWEEN value1 AND value2
   C. WHERE column_name BETWEEN (value1, value2)
   D. WHERE BETWEEN column_name value1 AND value2

7. **Which is the correct syntax for IN operator?**
   A. WHERE column_name IN (value1, value2, ...)
   B. WHERE column_name IN value1 AND value2
   C. WHERE column_name IN (value1 AND value2, AND ...)
   D. WHERE IN column_name value1 AND value2 AND ...

8. **Which operator will be used, if you want to print all names of a table starts with 'A'?**
   A. LIKE
   B. PATTERN
   C. SIMILAR
   D. =

9. **The statement that is executed automatically by the system as a side effect of the modification of the database is**:
   A. Backup
   B. Assertion
   C. Recovery
   D. Trigger

10. **Which of the following is NOT a characteristic of a relational database model?**
   A. Table
   B. Tree like structure
   C. Complex logical relationship
   D. Records

11. **Union operator is a :**
   A. Unary Operator
   B. Ternary Operator
   C. Binary Operator
   D. Not an operator

12. **Which normal form is considered adequate for normal relational database design?**
   A. 2NF
   B. 5NF
   C. 4NF
   D. 3NF

13. **Databases overall structure is maintained in a file called**:
   A. Redolog file
   B. Data file
   C. Control file
   D. File only

14. **The data manipulation language statements are:**
   A. Insert
   B. Update
   C. Select
   D. All of the above

15. To remove a relation from an SQL database, we use the _____ command.

A. Delete
B. Purge
C. Remove
D. Drop table

16. Which of the Sql statement is correct?

A. Select name, address and phone_number from home ;
B. Select name, address, phone_number from home;
C. Select name address, phone_number where name=’XYZ’;
D. None of the above

17. _____ allow us to identify uniquely a tuple in the relation.

A. Super key
B. Domain
C. Attribute
D. Schema

18. Minimal super keys are called:

A. Schema keys
B. Candidate keys
C. Domain keys
D. Attribute keys

19. Which of the following is NOT modification of the database?

A. Deletion
B. Insertion
C. Sorting
D. Updating

20. Which of the following in NOT an outer join?

A. Left outer join
B. Right outer join
C. Full outer join
D. All of the above

21. Which of the following relational algebra operations do NOT require the participating tables to be union-compatible?

A. Union
B. Intersection
C. Difference
D. Join

22. Which of the following is NOT a property of transactions?

A. Atomicity
B. Concurrency
C. Isolation
D. Durability

23. Relational Algebra does NOT have:

A. Selection operator
B. Projection operator
C. Aggregation operators
D. Division operator

24. Checkpoints are a part of:

A. Recovery measures
B. Security measures
C. Concurrency measures
D. Authorization measures

25. Tree structures are used to store data in:

A. Network model
B. Relational model
C. Hierarchical model
D. File based system

26. 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

27. Which of the following is NOT a level of data abstraction?

A. Physical Level
B. Critical Level
C. Logical Level
D. View Level

28. Disadvantages of File systems to store data is:

A. Data redundancy and inconsistency
B. Difficulty in accessing data
C. Data isolation
D. All of the above

29. In an Entity-Relationship Diagram Rectangles represents:

A. Entity sets
B. Attributes
C. Database
D. Tables

30. Which of the following is relation-algebra operation?

A. **Select**
B. Union
C. Rename
D. All of the above

SECTION B

Short Answer Questions

Answer any five (5) questions out of eight (8) questions [5×6=30]

1. Define trigger. How can you create trigger in table employee when delete row so that it can keep the record in history table? [2+4]

2. Define view. Create view from base table employee and job. [2+4]

3. Define index. Mention its importance. [2+4]

4. Name the three major set of files on disk that compose a database in Oracle.

5. Write your understanding on the ROWID and ROWNUM. Explain with sql query only top 10 rows. [2+4]

6. Differentiate between SQL and PL/SQL.

7. Explain OLTP and OLAP relational database in your own worlds.

8. Define data security. Describe the terms GRANT and REVOKE statements. [2+4]

SECTION C

Long Answer Questions

Attempt any two (2) questions out of three (3) questions [2×20=40]

1. Write the SQL Queries for the given schema;

- **i.** Student (Name, Studentnumber, Class, Major)
- **ii.** Course (CourseName, CourseNumber, Credit Hours, Department)
- **iii.** Section (Sectionidentifier, coursenumber, Semester, Year, Instructor)
- **iv.** Grade_report (studentNumber, SectionIdentifier, Grade)
- **v.** Prerequisite (Coursenumber, Prerequisite Number)
- **vi.** Change the class of student 'John' to 2
- **vii.** Delete the record for the student whose name is 'SMITH' and whose student number is 17.
- **viii.** For each section taught by Prof. Xiang., retrieve the course number, semester, year and number of students who took the section.
- **ix.** Retrieve the names and major departments of all straight –A students (students who have a grade of A in all their courses).
- **x.** Insert a new course, <'RDBMS', 'CS4390',3,'CS')

2. Define stored procedure and its major exception handling. Explain it with example using for loop and revenant exception handing. [8+12]

3. Write the history of ORACLE. Explain Oracle 10g Architecture. [10+10]

******BEST OF LUCK******