B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

MID-APRIL TEST 2025-26
INFORMATION TECHNOLOGY (802)

Class: XII (SUBJECT-5) **Time : 1 hr.**
Date: 17-04-2025 **Max Marks: 25**
Admission No. : …..…… **Roll No. :**

General Instructions:

1. *Please read the instructions carefully.*
2. *This Question Paper contain two sections: Section A & Section B.*
3. *Section A has Objective type questions whereas Section B contains Subjective type questions.*
4. *All questions of a particular section must be attempted in the correct order.*
5. ***SECTION A - OBJECTIVE TYPE QUESTIONS (09 MARKS):***
   - i. *This section has 02 questions.*
   - ii. *Marks allotted are mentioned against each question/part.*
   - iii. *There is no negative marking.*
   - iv. *Do as per the instructions given.*
6. ***SECTION B – SUBJECTIVE TYPE QUESTIONS (16 MARKS):***
   - i. *This section has 12 questions.*
   - ii. *A candidate has to do 7 questions.*
   - iii. *Do as per the instructions given.*
   - iv. *Marks allotted are mentioned against each question/part.*

MARKING SCHEME

SECTION A: OBJECTIVE TYPE QUESTIONS

Q.(1) Answer any 5 out of the given 6 questions : **(5 x 1 = 5)**

(i) What is the primary purpose of a database, as described in the provided text ?
(a) To represent a mini real world
(b) To create complex applications
(c) To replace real world data
(d) To organize data in a random format

(ii) Why are databases crucial for modern information systems, according to the text ?
(a) They allow data to be disorganized and unstructured
(b) They enable easy data retrieval with the help of complex query languages
(c) **They ensure data consistency, provide security and allow for data backup**
(d) They are primarily used for reporting and analytics, not data storage

(iii) The number of attributes in a relation is called its …….
(a) Degree (b) Attribute
(c) Cardinality (d) Domain

(iv) What SQL command is used to display a list of all databases in a database management system ?

(a) Display Databases; (b) List databases;
(c) Show databases; (d) View Databases;

(v) What is the initial step in setting up a database system ?
(a) Executing the Create database command **(b) Designing the database schema**
(c) Populating the database with data (d) Configuring database permissions

(vi) Which SQL command is used to display the tables within a specific database ?
(a) Show Database_Name; (b) Display Database_Name;
(c) Show Tables from Database_Name; (d) List tables Database_Name;

Q.(2) Fill in the blanks : **(4 x 1 = 4)**

(i) Tabular
(ii) Stored
(iii) Having
(iv) Delete

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 5 out of the given 8 questions: **(5 x 2 = 10)**

Q. (3) What is Data and Information ? Explain with example.
Ans. : Data refers to raw, unprocessed facts, figures, or statistics that, on their own, may not carry much meaning. Data can exist in many forms: numbers, text, images, sounds, or even sensor readings. It is the foundational element for all types of analysis and decision-making. The key point is that data lacks context or organization.
Examples of Data:

- Numbers: 45, 78, 32
- Text: "John", "blue", "apple"

Information, on the other hand, is data that has been processed, organized, or structured in a way that makes it meaningful and useful. When data is analyzed, interpreted, or given context, it transforms into information. It helps individuals or systems make decisions, gain understanding, and form conclusions.

Q. (4) What is the need/importance to have a database in modern information system ? Explain any four points.
Ans. : In modern information systems, databases play a crucial role in organizing, storing, and managing large volumes of data in a way that makes it easy to access, update, and analyze. Without databases, it would be difficult to manage the complex and large amounts of data that most organizations handle today. Here are four key points explaining the importance of having a database in modern information systems:
Data Organization
Data Retrievel
Integrity Constraints
Security
Consistent
Concurrent access
Data backup and recovery
Reporting and analytics

Data Persistence

Q. (5) What are the type of users in DBMS ? Name all and explain any one of them.
Ans. :
End User : The person who uses the database to find, update or create information
Database Administrator
Application Programmers
Syatem Analyst

Q. (6) Write two advantages and two disadvantages of DBMS approach.
Ans. :
Advantages :
Allows you to store data at one place
No repetition of data
Reduces the possibilities of data inconsistencies
Data can be shared with multiple users
Offers data security
Easy to access, modify, update or delete data
Disadvantages :
Cost of implementing DBMS is very high
Implementing the database and getting used to its functionalities is a long time consuming task
Data must be regularly backed up
Unauthorised access to database can cause a lot of harm to the company

Q. (7) Name any four aggregate functions used in SQL. Explain any one with its syntax.
Ans. :
COUNT
SUM
MAX ; Returns the maximum value in a column. Select Max(Column_name) from table_name
MIN
AVG

Q. (8) Write SQL command to create the following table ITEM :

Column Name	Datatype
G_ID	Char(4)
Description	Varchar(20)
Manufacture_Date	Date
Price	Decimal
Warranty	Int

Ans. :
Create table ITEM (G_ID cahr(4), Description varchar(20), Manufacture_Date Date, Price decimal, Warranty int);

Q. (9) Suggest the datatypes for the following columns of Salary table to be created :
Emp_ID
Name
Basic Salary

DateofJoin

Ans. :

Emp_ID	char/varchar(8)
Name	char/varchar(20)
Basic Salary	int
DateofJoin	date

Q. (10) With the help of an example explain the concept of self-referencing tables.

Ans. : A self-referencing table (or recursive relationship) is a table in a database that has a foreign key that references its own primary key. This type of relationship occurs when a record in the table is related to another record in the same table, creating a hierarchical structure or a parent-child relationship.

In simpler terms, a self-referencing table contains a column that links a record to another record in the same table. These types of relationships are often used to represent hierarchical data, like organizational structures, category trees, or folder structures.

Answer any 2 out of the given 4 questions : (2 x 3 = 6)

Q.(11) Name and explain four database operations.

Ans. :

Defining the database : You have to first define a database and set the structure and rules for data storage.
Populating the database : Once the database is designed, you need to populate it with data.
Manipulating the database : This involves operations that involve :
Modification of data, Retrieval of data, Report generation
Sharing of database : This allows multiple users to access the database concurrently.
Protecting the database :
Maintaining the database :

Q.(12) Write short notes on the following :

(a) Primary key (b) Foreign key (c) Candidate key

Ans. :

(a) Primary Key:

A Primary Key is a column or a set of columns in a database table that uniquely identifies each row in the table. It ensures that there are no duplicate values in the key column(s) and that every row in the table can be uniquely accessed. A primary key is essential for maintaining data integrity and consistency within the database.

(b) Foreign Key:

A Foreign Key is a column or a set of columns in a database table that creates a link between two tables. It refers to the primary key of another table. The foreign key ensures that data in one table corresponds to data in another, establishing a referential integrity between the tables.

(c) Candidate Key:

A Candidate Key is a column or a set of columns in a database table that can uniquely identify each row in the table, similar to a primary key. A table can have multiple candidate keys, but one of them is chosen to be the primary key. The remaining candidate keys are called alternate keys.

Q.(13) Take the below table as an example. (Table Name : Employee**)**

Employee_num	HRA	DA	Gross	PF Contributions

Write an SQL query to display for the following :

(a) Employee_num, HRA and Gross for all the employees.
(b) Employee_num, DA and Pf Contributions for employees whose DA is 7000 or more.
(c) Only the list of Employee_num's

Ans. :

(a) Select Employee_num, HRA , Gross from Employee;
(b) Select Employee_num, DA, PF Contributions from Employee where DA=>7000;
(c) Select Employee_num from Employee;

Q.(14) Consider the following table : (Table Name : Library**)**

Bid	**Name**	**Author**	**Price**	**Mem_name**	**Issue_Date**
B01	Wings of Fire	APJ Abdul Kalam	550	Sarita	2018-05-20
B02	The Monk who sold his Ferrari	Robin Sharma	340	Simmi	20108-03-15
B03	You can win	Shiv Khera	230	Rajat	2018-04-16
B04	Who moved my cheese	Spencer Johnson	450	Ram	2018-03-17
B05	Real Success	Patrick Mather - Pike	250	Sia	2018-06-18

Write the SQL command for the following statements :

(a) Display the entire table.
(b) Display those records having Mem_name "Ram"
(c) Display Name and Author of those books whose Price is more than 200.

Ans. :

(a) Select * from Library;
(b) Select * from Library where Mem_name = "Ram";
(c) Select Name, Author from Library where Price>200;

********** ALL THE BEST **********