



B.K. BIRLA CENTRE FOR EDUCATION

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



PERIODIC TEST I 2026-27

I.T – SET – 2 MARKING SCHEME/ ANSWER KEY

Class : XII

Date :

Admission No.:

Roll No.:

Duration : 1 Hrs

Max. Marks : 25

SECTION – A: MCQ

Q1. MCQ

- I. B) Cardinality
- II. c) Unique Key
- III. d) The order is mathematically irrelevant and does not affect the result of standard queries.
- IV. b) ON DELETE CASCADE
- V. d) SELECT
- VI. c) NOT NULL
- VII. d) DEFAULT
- VIII. d) A table that contains a Foreign Key referencing the Primary Key of the exact same table.
- IX. c) Compound sentence
- X. b) Judging the value and importance of the information received.

SECTION – B: Short Answer Questions

Q2. What is a Database? State any two problems of a traditional file system that a database solves. A Database is an organized collection of structured data stored and accessed electronically from a computer system.

- **Data Redundancy:** In traditional systems, the same data is often duplicated in different files. A database centralizes data to minimize this.
- **Data Inconsistency:** Databases ensure that if a piece of data is updated, the change is reflected across the entire system, preventing conflicting information.

Q3. Define Entity Integrity and Referential Integrity. Why are they important?

- **Entity Integrity:** Ensures that every table has a Primary Key that is unique and not null.
- **Referential Integrity:** Ensures that relationships between tables remain consistent. It requires that a Foreign Key value must match an existing Primary Key in the related table.
- **Importance:** These rules prevent "orphaned" records and ensure the reliability and accuracy of the data.

Q4. What is a DBMS? State any two advantages of using DBMS over a traditional file system. A Database Management System (DBMS) is software used to store, retrieve, and manage data while providing an interface between the user and the database.

1. **Improved Security:** DBMS allows administrators to restrict access to sensitive data.
2. **Concurrency Control:** Multiple users can access and update the data at the same time without causing errors.

Q5. Explain the roles of: (a) Database Administrator (DBA) (b) End User.

- **(a) DBA:** The person responsible for the technical management of the database, including security, performance, and backup.
- **(b) End User:** The person who interacts with the database through applications or queries to perform daily tasks like searching or reporting.

Q6. Explain ON DELETE CASCADE with an example. How is it different from ON DELETE SET NULL?

- **ON DELETE CASCADE:** When a record in the parent table is deleted, all corresponding records in the child table are automatically deleted.
 - *Example:* If a "Course" is deleted, all "Student Enrollments" for that course are also removed.
- **Difference: ON DELETE SET NULL** keeps the child records but sets the linking column (Foreign Key) to NULL, whereas CASCADE removes them entirely.

Q7. What is the Communication Cycle? Name and briefly explain any three components. The Communication Cycle is the process by which a message is sent, received, and interpreted, followed by feedback.

1. **Sender:** The person who initiates and encodes the message.
2. **Channel:** The medium (e.g., email, phone, face-to-face) used to transmit the message.
3. **Feedback:** The response from the receiver that confirms the message was understood.

Q8. Explain "Self-Referencing Table" and a real-world scenario. A Self-Referencing Table is a table where a Foreign Key references the Primary Key of the same table.

- **Scenario:** In an **Employee** table, every employee has an Emp_ID. A column called Manager_ID would be a Foreign Key that points back to the Emp_ID of the person who manages them.

Q9. What does the acronym M.I.N.T.S. stand for? It is a rule for capitalization:

BKBCE/EXAM/PT1/AI/CL-12/MS/SET-2/2026-27/NC/2/4

- **M** - Months (e.g., January)
- **I** - The letter "I"
- **N** - Names of people and places
- **T** - Titles of books or movies
- **S** - Start of a sentence

Q10. Differentiate between the Subject and the Predicate.

- **Subject:** The part of the sentence that names the person or thing doing the action.
- **Predicate:** The part of the sentence that contains the verb and tells something about the subject.
- **Example:** "The students **are studying for the exam.**"

Q11. DBMS in the MEDICAL sector. DBMS is used in healthcare to manage:

- **Electronic Health Records (EHR):** Storing patient history, prescriptions, and test results securely.
- **Hospital Resource Management:** Tracking bed availability and specialized medical equipment.

SECTION – C: Long Answer Questions

Q12. Discuss the advantages and disadvantages of DBMS.

- **Advantages:**
 1. **Data Sharing:** Multiple users can access data from different locations.
 2. **Data Security:** Centralized control over who can view or edit data.
 3. **Backup and Recovery:** Automated systems ensure data is not lost during a crash.
- **Disadvantages:**
 1. **Cost:** High initial investment in software, hardware, and trained staff.
 2. **Complexity:** Designing and maintaining a database requires specialized knowledge.

Q14. Explain Referential Integrity: CASCADE vs. SET NULL (Student–Class).

Referential integrity ensures that relationships between a **Class** table (parent) and a **Student** table (child) stay valid.

- **ON DELETE CASCADE:** If "Class A" is deleted, all students assigned to Class A are automatically removed from the database.
- **ON DELETE SET NULL:** If "Class A" is deleted, the students remain in the system, but their "Class_ID" field becomes blank (NULL), indicating they are currently unassigned.

Q15. SQL Queries (Referencing image_0c5ebe.png)

a) Count the total number of books:

SQL

```
SELECT COUNT(*) FROM Library;
```

b) Find the maximum price:

SQL

```
SELECT MAX(Price) FROM Library;
```

c) Display books where Price is between 200 and 400:

SQL

```
SELECT * FROM Library WHERE Price BETWEEN 200 AND 400;
```

******* END OF ANSWER KEY – SET 2 *******