

BCM SCHOOL
BASANT AVENUE DUGRI ROAD LUDHIANA
ASSIGNMENT

Information Technology (402) – Class X

Introduction to DBMS & Getting Started with LibreOffice Base

Total Marks: 30

General Instructions

1. The assignment contains 15 MCQs (15 marks) and 15 marks of competency-based/theory questions.
2. Read each situation carefully before answering.
3. Give reasons wherever required.
4. Questions are designed to assess application, analysis and problem-solving skills.

SECTION A – MCQs

15 × 1 = 15 Marks

Q1. A school stores the following information about students: Admission No., Name, Class, Section and Phone Number. Which option best describes this collection of related data?

- a) Program
- b) Database
- c) Operating system
- d) Spreadsheet formula

Q2. A school maintains student records in separate spreadsheets for each class. Searching for a student's complete information requires checking several files. Which DBMS feature would primarily solve this problem?

- a) Data redundancy
- b) Centralised data management
- c) Data duplication
- d) Manual filing

Q3. Consider the following table. Which field would be the most suitable primary key?

- a) Name

- b) Class
- c) Admission No.
- d) Phone

Q4. A school database contains the same student's address in five different tables. The address is changed in one table but not in the others. What problem is illustrated here?

- a) Data security
- b) Data inconsistency
- c) Data validation
- d) Data independence

Q5. A librarian wants to store information about books, students and book issues in an organised manner. Which software would be more appropriate than a word processor?

- a) LibreOffice Writer
- b) LibreOffice Impress
- c) LibreOffice Base
- d) LibreOffice Draw

Q6. A database administrator wants to retrieve only students belonging to Class X-A from a large student table. Which database object is most appropriate?

- a) Form
- b) Query
- c) Report
- d) Table

Q7. A teacher wants to enter student information through a user-friendly screen rather than directly typing into a table. Which Base object would be most suitable?

- a) Form
- b) Query
- c) Report
- d) Relationship

Q8. A principal wants a neatly formatted list showing the number of students in each class for a meeting. Which database object would be most useful?

- a) Table
- b) Form
- c) Report
- d) Query

Q9. Which statement best explains why a primary key is important?

- a) It stores only numerical values.
- b) It identifies each record uniquely.
- c) It automatically creates reports.
- d) It hides confidential data.

Q10. A database table has 5,000 student records. A teacher wants to find students whose attendance is below 75%. Which approach is most efficient?

- a) Read every record manually
- b) Create a query with a suitable condition
- c) Create a presentation
- d) Print the entire table first

Q11. Assertion (A): A DBMS can reduce unnecessary duplication of data.

Reason (R): A well-designed database can organise related data systematically and allow it to be shared between different operations.

- a) Both A and R are true, and R correctly explains A.
- b) Both A and R are true, but R does not explain A.
- c) A is true but R is false.
- d) A is false but R is true.

Q12. A school wants to connect a Students table with a Fees table using Admission No. What is the main purpose of creating such a relationship?

- a) To change the font of records
- b) To connect related information stored in different tables
- c) To create animations
- d) To delete duplicate records automatically

Q13. Which situation is the strongest reason for using multiple related tables instead of putting everything into one large table?

- a) To increase unnecessary duplication
- b) To make the database more organised and reduce redundancy
- c) To make data entry impossible
- d) To eliminate the need for keys

Q14. In LibreOffice Base, a student creates a database and wants to define the structure of the data before entering records. What should the student create first?

- a) Table structure
- b) Report
- c) Presentation
- d) Animation

Q15. A school database contains confidential student information. Which DBMS advantage is most relevant in this situation?

- a) Better data security and controlled access
- b) Better slide transitions
- c) Faster image editing
- d) Automatic video creation

SECTION B – HIGHER-ORDER & COMPETENCY-BASED QUESTIONS

15 Marks

Q16. Case-Based Question – 3 Marks

A school currently maintains student information in different Excel files. The admission department maintains personal details, the examination department maintains marks and the accounts department maintains fee information. The same student's name and address are entered repeatedly in different files.

- a) Identify two problems that may arise from this method of storing information. (2)
- b) Explain how a DBMS can improve this situation. (1)

Q17. Application-Based Question – 3 Marks

A school wants to create a database for managing its library. The following information needs to be stored:

• Book ID • Book Name • Author • Student ID • Student Name • Issue Date • Return Date

A student suggests putting all this information into a single table.

- a) Do you agree with the suggestion? Give a reason. (1)
- b) Suggest two suitable tables that could be created instead. (1)
- c) Identify one field that could act as a primary key in each suggested table. (1)

Q18. Problem-Solving Question – 3 Marks

A teacher creates a table called STUDENT in LibreOffice Base:

Admission No. | Name | Class | Section | Contact No.

101 | Aarav | X | A | 9876543210

102 | Mehak | X | B | 9876543211

103 | Aarav | X | A | 9876543212

The teacher decides to use Name as the primary key.

- a) Identify the problem with the teacher's decision. (1)
- b) Which field would you recommend as the primary key? Why? (1)
- c) What important characteristic should a primary key possess? (1)

Q19. Competency-Based Question – 3 Marks

The school principal wants the following operations to be performed using LibreOffice Base:

1. Enter student information through a convenient interface.
2. Find students whose marks are above 90%.
3. Prepare a printable list of students selected for an academic award.

Identify the most appropriate LibreOffice Base object for each operation and justify your choices.

Q20. HOTS Question – 3 Marks

A school database has been designed with separate tables for Students, Classes, and Fees. The database designer wants to connect these tables so that information can be retrieved efficiently.

Explain:

- a) Why are relationships between tables required? (1)
- b) How can relationships reduce duplication and improve data organisation? (1)
- c) Give one example of a field that could be used to establish a relationship between two tables. (1)