B.K. BIRLA CENTRE FOR EDUCATION

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

NABET

INDIAN PUBLIC SCHOOLS' CONFERENCE

TERM 1 EXAMINATION (2025-26)
INFORMATION TECHNOLOGY (802)

Class: XII (SUBJECT-4)   **Time : 3 hrs.**
Date: 10-09-2025   **Max Marks: 60**
Admission No. : …..…………   **Roll No. :**

General Instructions:
1. *Please read the instructions carefully.*
2. *This Question Paper consists of 22 questions in 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 (30 MARKS):***
   i. *This section has 05 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 (30 MARKS):***
   i. *This section has 17 questions.*
   ii. *A candidate has to do 11 questions.*
   iii. *Do as per the instructions given.*
   iv. *Marks allotted are mentioned against each question/part.*

ANSWER KEY

SECTION A: OBJECTIVE TYPE QUESTIONS

Q.(1) Answer any 4 out of the given 6 questions on Employability Skills.   **(4 x 1 = 4)**

(i) 'O' in the acronym 'OCEAN' stands for:
   (a) Openness   (b) Obedient
   (c) Object   (d) None of these

(ii) Mona is helping her sister to overcome a personality disorder. What should she do ?
   (a) Talk to her sister   (b) Engage her in hobbies
   (c) Help her build confidence   **(d) All of these**

(iii) An individual who initiates, creates and manages a new business can be called …………
   (a) A leader   (b) A manager
   (c) An entrepreneur   (d) A professional

(iv) Self management is also called
   (a) **Self control**   (b) Personality
   (c) Stress   (d) None of these

(v) The intersection point between a row and column is called …………………….
   (a) Row   (b) Column
   (c) Table   **(d) Cell**

(vi) Extension of an OpenOffice Calc file is _____.

(a) .doc   **(b) .ods**

(c) .odx   (d) .odp

Q.(2) Answer any 3 questions out of the given 4 questions on Introduction to database Concepts.

(3 x 1 = 3)

(i) Which of the following is a benefit of organizing data in a tabular structure within a database?

(a) It enables simple storage, access, and manipulation of data.

(b) It adds more complexity to the data.

(c) It makes retrieving information harder.

(d) It restricts integration with applications.

(ii) Why are databases crucial for modern information systems?

.(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 is the purpose of the Alter Table command?

(a) To add or remove a database

(b) To delete an existing table

(c) To modify the structure of an existing table

(d) To create a new table

Q.(3) Answer any 6 questions out of the given 7 questions on Working with SQL.

(6 x 1 = 6)

(i) How do you add a PRIMARY KEY constraint to an existing table?

(a) ALTER TABLE table_name ADD PRIMARY KEY (column_name);

(b) MODIFY TABLE table_name SET PRIMARY KEY (column_name);

(c) UPDATE TABLE table_name ADD PRIMARY KEY (column_name);

(d) None of these;

(ii) 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

(iii) 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;

(iv) ……………….. command displays list of databases available in the current server.

(a) Show Databases   (b) Show tables

(c) Create tables   (d) Display tables

(v) Which language is used to manage data in a database?

(a) Java   (b) HTML

(c) SQL   (d) C++

(vi) What is the purpose of the SELECT statement?

(a) To update data in a table   (b) To delete data from a table

(c) To insert data into a table   **(d) To retrieve data from a table**

(vii) What command means "display all columns"?

(a) SHOW COLUMNS   (b) DISPLAY COLUMNS

(c) LIST COLUMNS   **(d) SELECT ***

Q.(4) Answer any 7 questions out of the given 9 questions on Operating Web based Applications.   **(7 x 1 = 7)**

(i) What is the main objective of E-Governance ?
- (a) Increase paper usage in offices
- (b) Improve communication among family members
- **(c) Provide government services online**
- (d) Encourage physical visits to government offices

(ii) What does the R in IRCTC stand for ?
- (a) Robot
- (b) Rover
- **(c) Railway**
- (d) Rebel

(iii) NICNET – A national satellite based computer network in India was launched in the year :
- (a) 1986
- **(b) 1987**
- (c) 1990
- (d) 1992

(iv) Unit, integration and user acceptance are all forms of :
- (a) Frontend development
- (b) Backend development
- (c) Integration
- **(d) Testing**

(v) What kind of online courses does Khan Academy provide ?
- **(a) Free**
- (b) Paid
- (c) Mobile Wallets
- (d) Internet banking

(vi) The first step in online shopping is to :
- **(a) Visit the websites**
- (b) Open your smartphone
- (c) Use your debit card
- (d) None of these

(vii) Credit card bills as well as Internet and cable bills can be paid :
- (a) Online
- (b) Offline
- **(c) Both (a) and (b)**
- (d) None of these

(viii) In online reservation systems, which of the following is usually required?
- (a) A passport photo
- (b) Paper ticket only
- **(c) Internet connection and login credentials**
- (d) Offline registration

(ix) What is essential for developing a web-based project?
- (a) Knowing only HTML
- (b) A team of two or more people
- **(c) Clear project goals and proper planning**
- (d) Printing the project plan

Q.(5) Answer any 10 questions out of the given 12 questions on Java Programming with Net beans. **(10 x 1 = 10)**

(i) Which feature of Java makes it platform independent?
- (a) Object-Oriented Programming
- (b) **Bytecode and JVM**
- (c) Automatic Garbage Collection
- (d) Inheritance

(ii) What is the main method signature used to start a Java program?
- (a) **public static void main(String args[])**
- (b) public void main(String args)
- (c) static public main(String[] args)
- (d) public static int main(String args[])

(iii) Which operator is used to perform addition in Java ?
- (b) +
- (b) **-**
- (c) *****
- (d) **/**

(iv) What will be the value of x after the following code :
int x = 8;
x += 3;
- **(a) 11**
- (b) 8
- (c) 3
- (d) 5

(v) What is the result of the expression 8%3 in Java ?
- **(a) 2**
- (b) 3
- (c) 2.67
- (d) 2.0

(vi) Which operator is used to increment a variable by 1 in Java ?
- (a) ++
- (b) **--**
- (c) +=
- (d) ***=**

(vii) In Java, what is the purpose of the "if" statement ?

(a) To declare a variable

(b) To repeat a block of code until a condition is met

(c) To execute a block of code conditionally based on a Boolean expression

(d) To perform arithmetic operations

(viii) What happens if the condition specified in an "if" statement evaluates to false ?

(a) The program terminates

(b) The code block associated with the "if" statement is skipped

(c) The code block associated with the "if" statement is executed

(d) An exception is thrown

(ix) In java, why is it necessary to initialize variables before usage ?

(a) To ensure that the variable holds a specific value throughout its lifecycle.

(b) To prevent memory leaks in the program

(c) To allow the compiler to allocate the appropriate amount of memory for the variable

(d) To optimize the performance of the program by reducing memory consumption

(x) Which logical operator in Java evaluates to True if either of the operands is true ?

(a) && (b) || (c) **!** (d) **%**

(xi) Which part of a "for" loop in Java is optional ?

(a) Initialization (b) Condition

(c) Increment/Decrement **(d) All parts are optional**

(xii) Which of the following statements is used to terminate a "for" loop prematurely in Java ?

(a) Continue (b) Exit **(c) Break** (d) Return

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 4 questions on Employability Skills **(3 x 2 = 6)**

Q. (6) Define Goal Setting.

(a) Goal Setting

Goal Setting is the process of identifying something you want to achieve and planning steps to reach it. It helps you stay focused, motivated, and organized in working toward your personal or professional objectives.

Q. (7) Define self motivation. Why is self motivation important ?

Self-motivation is the ability to drive yourself to take action and achieve goals without needing external encouragement or pressure. It comes from an internal desire to improve, learn, or succeed.

Importance of Self-Motivation:

1. **Helps Achieve Goals:** It pushes you to work consistently towards your personal or professional goals.
2. **Builds Confidence:** Self-motivated people believe in their abilities and take initiative.
3. **Improves Performance:** It encourages focus, discipline, and productivity.
4. **Overcomes Challenges:** Helps in staying positive and determined even when facing difficulties.
5. **Promotes Growth:** Leads to continuous learning and self-improvement.

Q. (8) What is a function in Calc ? Explain the following Calc functions with the help of examples :

(a) Count() (b) MAX()

In LibreOffice Calc, a function is a predefined formula that performs a specific calculation using given values (arguments). Functions save time by avoiding the need to write formulas from scratch.

(a) `COUNT()` Function
Purpose: Counts the number of numeric values in a range of cells.
Syntax:
=COUNT(value1; value2; …)
Example:
If cells A1:A5 contain: `12, 25, hello, 45, 78`
Formula:
`=COUNT(A1:A5)`
 (b) `MAX()` Function
Purpose: Returns the largest numeric value in a list or range.
Syntax:
=MAX(value1; value2; …)
Example:
If cells B1:B4 contain: 15, 42, 7, 28
Formula:
=MAX(B1:B4)

Q. (9) List any four qualities of an Entrepreneur. Explain any two.

Four Qualities of an Entrepreneur

1. Creativity
2. Risk-taking ability
3. Leadership skills
4. Decision-making ability

Explanation of Any Two:

1. Creativity –
   An entrepreneur must think of new ideas, products, or ways of doing things to stand out in the market. Creativity helps in problem-solving and innovation.
2. Risk-taking ability –
   Entrepreneurs often face uncertain situations. They must be willing to take calculated risks to start and grow their business, even when success is not guaranteed.

Answer any 3 out of the given 5 questions on Subject Specific Skills. **(3 x 2 = 6)**

Q.(10) What is Data and Information ? Explain with example.
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.(11) Name and explain any two aggregate functions used in SQL. Give example also.

Ans:
COUNT
MAX ; Returns the maximum value in a column. Select Max(Column_name) from table_name
MIN
SUM() : It is used to find the total of numbers in a range of cells.
=SUM(A1:A5)

AVERAGE() : It is used to find the average of numbers in a given range of cells.
=AVERAGE(A1:A5)

Q.(12) Write SQL command to create the following table :
Table: Devices

Column name	Datatype
D_ID	Char(4)
Description	Varchar(20)
Manufacture_date	Date
Price	Decimal
Warranty	Int

Ans: Create Table Devices (D_ID char(4), Description varchar(20), Manufacture_date Date, Price decimal, Warranty int);

Q.(13) What is E-Governance ? Name any two E-Governance sites of India.
It stands for Electronic Governance. It refers to the usage of interent and communication technology tools. It allows citizens to access government services and information efficiently and effectively. It provides an online to manage and deliver vgovernment services, exchange information and engage with the public.
https://www.india.gov.in
https://www.igod.gov.in
https://www.india,gov.in/e-governance-portal

Q.(14) What is the difference between print and println command in Java ?

Command	Description	Example Output
print()	Prints the text and **keeps the cursor on the same line** (does not add a newline).	System.out.print("Hello"); System.out.print("World"); → Output: HelloWorld
println()	Prints the text and **moves the cursor to the next line** (adds a newline at the end).	System.out.println("Hello"); System.out.println("World"); → Output:HelloWorld

print → output stays **on the same line**.
println → output moves **to the next line** after printing.
Answer any 2 out of the given 3 questions on Subject Specific Skills. **(2 x 3 = 6)**

Q.(15) Name and explain any three types of users available in DBMS. .

Type of User	Role

End user	The person who uses the database to find, update or create information
Database Administrator	Administers the database by Providing access Monitoring its usage Providing technical support Acquiring software and hardwarte resources
Application programmers	Writing programs using SQL and high level programming languages to interact with database
Syatem Analyst	Interacts with the end user to understand the requirement and then creates the specifications accordingly.

Q.(16) Take the below table as an example. (Table Name : Employee)

Employee_name	Emp_No	DOB	Sal	MobNo

Write an SQL query to display for the following :
(a) Display Employee name, emp number and salary for all the emloyess.
Select employee_name, emp_no, sal from employee;
(b) Display employee_name, emp_no and DOB for whose salary are 3000 or more.
Select employee_name, emp_no, DOB from employee where sal>=3000;
(c) Display only the list of employee_name
Select employee_name from employee;

Q.(17) What are the best practices for naming variables in Java ? Explain any three

Use meaningful and descriptive names –
Variable names should clearly indicate their purpose.
Example: studentName is better than sn because it tells exactly what the variable stores.

Follow camelCase convention –
In Java, variable names usually start with a lowercase letter, and each new word starts with a capital letter.
Example: totalMarks, averageScore.

Avoid using keywords or special characters –
Java reserved words like class, int, static cannot be used as variable names, and variable names cannot have spaces or special symbols (except _ and $).

Answer any 3 out of the given 5 questions on Subject Specific Skills. **(3 x 4 = 12)**

Q.(18) Write short notes on the following :
     (a) Primary key   (b) Foreign key   (c) Candidate key   (d) Super key
(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.

(d) Super Key :
A super key is a set of one or more attributes (columns) in a database table that can uniquely identify each record (row) in that table.

Q.(19) Consider the following table: Products

ProductID	ProductName	Category	Quantity	Price	Factory
101	Steel Rods	Raw Material	500	120	Factory A
102	Copper Wires	Raw Material	300	200	Factory B
103	Bolts	Hardware	800	15	Factory A
104	Nuts	Hardware	600	10	Factory C
105	Machine Gear	Components	150	500	Factory B
106	Plastic Sheets	Raw Material	400	50	Factory A
107	Bearings	Components	250	300	Factory C

Write SQL Query for the following :
1. Write a query to display products whose price is greater than 100.
SELECT * FROM Products WHERE Price > 100;
2. Write a query to display all products manufactured in Factory A.
SELECT * FROM Products WHERE Factory = 'Factory A';
3. Write a query to display all products in ascending order of Price.
SELECT * FROM Products ORDER BY Price ASC;
4. Write a query to add a new column ManufactureDate in the Products table.
ALTER TABLE Products ADD ManufactureDate DATE;

Q.(20) Consider the following table : Order

OrderID	CustomerName	Product	Quantity	Price
1	Rahul	Pen	10	5
2	Meena	Notebook	5	40

OrderID	CustomerName	Product	Quantity	Price
3	Suresh	Pencil	20	3
4	Anita	Geometry Box	2	60

Write SQL Query for the following :

1. Display CustomerName, Product, and TotalAmount (Quantity $\times$ Price) for all orders.
2. Display the details of orders where Quantity is more than 5.
3. Display products in alphabetical order of Product name.
4. Display the entire table.

Ans. :

1. SELECT CustomerName, Product, (Quantity * Price) AS TotalAmount
   FROM Order;
2. SELECT * FROM Order WHERE Quantity > 5;
3. SELECT Product FROM Order ORDER BY Product ASC;
4. SELECT * FROM Order;

Q.(21) Write and explain any four precautions that you must take while performing online transactions.
Ans. :
1. Use Strong and Unique Passwords
Always create passwords that are a mix of uppercase, lowercase, numbers, and symbols.
Avoid using easily guessable details like your name, birth date, or "123456."
2. Check Website Security (HTTPS & Padlock Symbol)
Before entering personal or payment details, make sure the website URL starts with https:// and shows a padlock symbol.
Avoid making payments on suspicious or unsecured websites.
3. Avoid Using Public Wi-Fi for Transactions
Never make online payments using free public Wi-Fi (cafes, airports, etc.).
Hackers can easily intercept your data on unsecured networks.
4. Enable Two-Factor Authentication (2FA)
Use OTPs (One-Time Passwords) or authentication apps for extra security.
Even if someone knows your password, they cannot complete the transaction without the second verification step.

Q.(22) Write a program in Java for the following :
       (a) To print "Hello World"
       (b) To display addition of two numbers 3 and 5.

(a)
```
public class HelloWorld {
   public static void main(String[] args) {
      System.out.println("Hello World");
   }
}
```

(b)

```java
public class Addition {
    public static void main(String[] args) {
        int num1 = 3;
        int num2 = 5;
        int sum = num1 + num2;

        System.out.println("The sum of " + num1 + " and " + num2 + " is: " + sum);
    }
}
```
*********** ALL THE BEST ************