



**B.K. BIRLA CENTRE FOR EDUCATION**

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



**TERM 1 EXAMINATION (2026-27)**  
**INFORMATION TECHNOLOGY (802)**

**SET - 1**

**MARKING SCHEME**

**Class: XII (SUBJECT-5)**

**Date: 04/09/26**

**Admission No. :**

**Time : 3 hrs.**

**Max Marks: 60**

**Roll No. :**

**General Instructions:**

1. Please read the instructions carefully.
2. This Question Paper consists of 23 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 18 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: (4 x 1 = 4)**
- (i) Which of the following is the last element of the communication cycle?  
(a) Sender (b) Message (c) Channel **(d) Feedback**
  - (ii) Which of the following best describes active listening?  
(a) Listening passively without responding  
(b) Hearing words without comprehension  
**(c) A process of comprehending and offering support to the speaker**  
(d) Interrupting the speaker to share your experiences
  - (iii) In the acronym 'SMART' used for goal setting, the letter 'M' stands for .....  
(a) Motivated **(b) Measurable** (c) Managed (d) Modern
  - (iv) Which personality trait is characterised by anxiety, self-doubt, depression and excessive worrying?  
(a) Extraversion (b) Agreeableness (c) Openness **(d) Neuroticism**
  - (v) A workbook in a spreadsheet refers to:  
(a) A single document only

- (b) **A spreadsheet with one or more worksheets**
- (c) A rectangular box where a row and a column meet
- (d) The toolbar of the software application
- (vi) The default file extension of a file saved in OpenOffice Calc is .....
  - (a) .odt   **(b) .ods**   (c) .odp   (d) .odb

**Q.(2) Answer any 8 out of the given 10 questions:**

**(8 x 1 = 8)**

- (i) DBMS stands for .....
  - (a) Data Base Master System   **(b) Database Management System**
  - (c) Data Backup Management Software   (d) Digital Base Managing System
- (ii) Fill in the blank: The number of attributes in a relation is called the ..... of a relation.
  - (a) Degree**   (b) Cardinality   (c) Tuple   (d) Domain
- (iii) In a relational database, when the value of an attribute in a tuple is not known, not available or not applicable, which special value is used to represent it?
  - (a) ZERO   (b) SPACE   **(c) NULL**   (d) DEFAULT
- (iv) Which of the following is not an advantage of using a DBMS?
  - (a) Reduction in data redundancy   (b) Improved data consistency
  - (c) Improved data availability   **(d) Increased data duplication**
- (v) A single row of a table in a relational database is known as a .....
  - (a) Attribute   **(b) Tuple**   (c) Domain   (d) Degree
- (vi) Which key uniquely identifies each record of a table and cannot contain a NULL value?
  - (a) Foreign key   **(b) Primary key**   (c) Alternate key   (d) Composite key
- (vii) The duplication of the same data in more than one file or table is known as .....
  - (a) Data consistency   **(b) Data redundancy**
  - (c) Data integrity   (d) Data security
- (viii) Which of the following is an application of a Database Management System (DBMS)?
  - (a) Storing students' academic records**   (b) Creating digital paintings
  - (c) Playing audio and video files   (d) Writing fictional stories
- (ix) The number of tuples present in a relation is called its .....
  - (a) Degree   (b) Domain   **(c) Cardinality**   (d) Attribute
- (x) State whether the following statement is True or False:  
A Database Management System allows more than one user to access the same data at the same time.

**Ans. True**

**Q.(3) Answer any 5 out of the given 6 questions:**

**(5 x 1 = 5)**

- (i) Which SQL command is used to display the list of all the databases present in the server?
  - (a) SHOW TABLES;   **(b) SHOW DATABASES;**
  - (c) DISPLAY DATABASES;   (d) LIST DATABASES;
- (ii) Which of the following is not an aggregate function in SQL?
  - (a) COUNT()   (b) MAX()   (c) SUM()   **(d) UPDATE()**
- (iii) What is the purpose of the WHERE clause in SQL?
  - (a) It adds a new column to a table.
  - (b) It filters rows on the basis of a condition.**
  - (c) It sorts the rows in ascending or descending order.
  - (d) It renames the columns of a table.
- (iv) Which SQL clause is used to sort the data in ascending or descending order?
  - (a) ORDER BY**   (b) SORT BY   (c) GROUP BY   (d) ARRANGE BY
- (v) State whether the following statement is True or False:

The following SQL command is used to delete a relation/table from a relational database.  
DELETE TABLE STUDENT;

**Ans. False (The correct command is DROP TABLE STUDENT;)**

- (vi) Which SQL command is used to modify the attribute values of one or more tuples in a table?  
(a) INSERT (b) **UPDATE** (c) DELETE (d) SELECT

**Q.(4) Answer any 5 out of the given 6 questions: (5 x 1 = 5)**

- (i) In which phase of the creation of a web application is the actual layout of the application designed?

(a) Requirement Definition (b) **Design**  
(c) Implementation (d) Testing

- (ii) Which of the following is known as the National Portal of India?

(a) **www.india.gov.in** (b) www.irctc.co.in  
(c) www.goidirectory.nic.in (d) www.w3schools.com

- (iii) NICNET, the national satellite-based computer network, was launched in the year .....

(a) 1975 (b) **1987** (c) 1990 (d) 1995

- (iv) Unit testing, integration testing and user acceptance testing are all forms of .....

(a) Front-end development (b) Back-end development  
(c) **Testing** (d) Deployment

- (v) Which of the following correctly describes online shopping?

(a) Customers can buy only books and electronics over the Internet.  
(b) **Customers can browse items online, place them in a virtual basket and make payment.**  
(c) Customers can shop online, but must pay only in cash at delivery.  
(d) Customers can select items online, but cannot have them delivered.

- (vi) Which of the following is an example of an e-Governance website of India?

(a) www.amazon.in (b) **www.uidai.gov.in**  
(c) www.gmail.com (d) www.wikipedia.org

**Q.(5) Answer any 8 out of the given 10 questions: (8 x 1 = 8)**

- (i) GUI, in the context of programming, stands for .....

(a) General User Interface (b) **Graphical User Interface**  
(c) Graphical Utility Interface (d) General Utility Interface

- (ii) Which of the following operators in Java is used to compare two values for equality?

(a) = (b) **==** (c) != (d) >

- (iii) What will be the value of x after the execution of the following statements?

```
int x = 7;  
x += 3;
```

(a) 7 (b) 3 (c) **10** (d) 21

- (iv) What is the result of the expression 9 % 4 in Java?

(a) 2 (b) **1** (c) 2.25 (d) 0

- (v) Which loop in Java executes at least once even when the condition is False?

**Ans. The do-while loop**

- (vi) Which of the following is an invalid variable name in Java?

(a) product\_1 (b) marks (c) sales123 (d) **total-Marks**

- (vii) How many bits of memory does a short type variable use in Java?

**Ans. 16 bits (2 bytes)**

- (viii) In Java, which operator is used to access the data members and method members of an object?

- (a) equal (=) operator (b) plus (+) operator  
**(c) dot (.) operator** (d) comma (,) operator
- (ix)** Which of the following is a logical operator in Java?  
 (a) && (b) || (c) ! (d) %
- (x)** Which part of a “for” loop in Java is optional?  
 (a) Initialization (b) Condition  
 (c) Increment/Decrement **(d) All part are mandatory**

## **SECTION B: SUBJECTIVE TYPE QUESTIONS**

**Answer any 3 out of the given 5 questions: Answer each question in 20 – 30 words. (3 x 2 = 6)**

**Q.(6) What is meant by the communication cycle? Name any two elements of the communication cycle. 2**

The communication cycle is the complete process in which a sender sends a message to a receiver through a channel, the receiver understands it and sends feedback back to the sender.  
 Any two elements: Sender, Message, Channel (medium), Receiver, Feedback.  
 (1 mark for the meaning + 1 mark for any two elements)

**Q.(7) “Listening skill is one of the most important skills in communication.” Mention any two points to support this statement. 2**

1. Good listening helps a person understand the message correctly and avoids misunderstanding.
  2. It builds trust and good relations, as the speaker feels respected and valued.
  3. It helps in giving a correct and suitable response or feedback.
- (1 mark each for any two correct points)

**Q.(8) Define self-motivation. Write any one difference between internal and external motivation. 1+1=2**

Self-motivation is the ability of a person to drive himself/herself to take action and achieve goals without any pressure or encouragement from others.  
 Difference: Internal motivation comes from within a person, such as personal satisfaction, interest or the desire to learn, whereas external motivation comes from outside factors such as rewards, money, prizes or praise from others.

**Q.(9) Write any two benefits of having a positive attitude. 2**

1. It reduces stress and keeps a person mentally and physically healthy.
  2. It increases confidence and helps a person face problems and failures calmly.
  3. It improves relations with others and creates a pleasant working environment.
- (1 mark each for any two correct benefits)

**Q.(10) What is a cell address in a spreadsheet? Explain with the help of an example. 1+1=2**

A cell address is the unique name of a cell in a worksheet, formed by joining the column letter and the row number of that cell. It is used to identify and refer to a cell in formulas.  
 Example: C5 is the cell address of the cell that lies at the intersection of column C and row 5.

**Answer any 3 out of the given 5 questions: Answer each question in 20 – 30 words. (3 x 2 = 6)**

**Q.(11) What is the difference between data and information? Explain with the help of an example. 2**

Data means raw, unprocessed facts and figures which do not carry any meaning on their own, whereas information is the processed and organised form of data which is meaningful and useful for taking decisions.  
 Example: The marks 85, 72, 91 are data; the statement “The average marks of the class are 82.6” is information.

**Q.(12) Write one similarity and one difference between the CHAR and VARCHAR data types in SQL. 1+1=2**

Similarity: Both CHAR and VARCHAR are used to store alphanumeric (character/string) data in a column of a table.

Difference: CHAR is of fixed length, so it always occupies the declared number of characters, whereas VARCHAR is of variable length and occupies only as much space as the data actually entered.

**Q.(13) Write any two differences between the print() and println() methods in Java. 2**

1. print() displays the output and keeps the cursor on the same line, whereas println() displays the output and then moves the cursor to the beginning of the next line.
2. The next output printed after print() appears on the same line, while the next output printed after println() appears on a new line.

**Q.(14) Write the output of the following Java code: 2**

```
public class SumClass {  
    public static void main(String[] args) {  
        int x, y, sum;  
        x = 5;  
        y = 5;  
        sum = x + y++;  
        System.out.println("y = " + y);  
        System.out.println("sum = " + sum);  
    }  
}
```

Output:

```
y = 6  
sum = 10
```

Explanation: y++ is a post-increment operator, so the old value of y (5) is used in the expression, giving sum = 5 + 5 = 10, and after that y becomes 6.

**Q.(15) Explain do-while loop with example.**

A **do-while loop** is a looping statement in Java that executes a block of statements **at least once**, and then checks the condition. If the condition is true, the loop executes again.

```
public class Main {  
    public static void main(String[] args) {  
        int i = 1;  
        do {  
            System.out.println(i);  
            i++;  
        } while (i <= 5);  
    }  
}
```

**Answer any 2 out of the given 4 questions: Answer each question in 30 – 50 words. (2 x 3 = 6)**

**Q.(16) Explain the following keys used in a Database Management System: 3**

- (a) Primary Key      (b) Candidate Key      (c) Foreign Key

- (a) **Primary Key:** A primary key is an attribute or a set of attributes which uniquely identifies every record (tuple) of a table. It can never contain a duplicate value or a NULL value. Example: AdmNo in the table Student.
- (b) **Candidate Key:** A candidate key is an attribute or a set of attributes which is capable of uniquely identifying each record of a table. A table may have more than one candidate key, out of which one is selected as the primary key and the rest are called alternate keys.
- (c) **Foreign Key:** A foreign key is an attribute of a table which refers to the primary key of another table. It is used to establish a relationship between two tables and maintains referential integrity.
- (1 mark for each correct explanation)

**Q.(17) What is e-Governance? Name any two e-Governance websites of India and write one use of each. 1+2=3**

e-Governance means the use of the Internet and information and communication technology by the government to deliver its services and information to citizens in a fast, easy and transparent manner.

1. [www.india.gov.in](http://www.india.gov.in) – The National Portal of India; it gives citizens single-point access to government services, schemes and departmental information.
2. [www.uidai.gov.in](http://www.uidai.gov.in) – The Aadhaar portal; it is used to apply for an Aadhaar card, download an e-Aadhaar and update Aadhaar details.

(Any two correct e-Governance websites with their uses may be accepted, e.g. [www.irctc.co.in](http://www.irctc.co.in), [www.incometax.gov.in](http://www.incometax.gov.in), [www.passportindia.gov.in](http://www.passportindia.gov.in))

**Q.(18) Rewrite the following Java program using a while loop: 3**

```
public class Monuments {
    public static void main(String[] args) {
        int i = 0;
        while (i < 5) {
            if (i % 2 == 0)
                System.out.println("Monument-1: Taj Mahal");
            else
                System.out.println("Monument-2: Gateway of India");
            System.out.println("Monuments of India");
            i++;
        }
    }
}
```

(1 mark for correct initialisation, 1 mark for correct while condition, 1 mark for correct body with increment)

**Q.(19) Explain any three primitive data types available in Java along with the size occupied by each in memory. 3**

1. **int** – It is used to store whole numbers (without a decimal point), for example 25 or –100. It occupies 4 bytes (32 bits) of memory.
2. **char** – It is used to store a single character enclosed in single quotes, for example 'A'. It occupies 2 bytes (16 bits) of memory.
3. **double** – It is used to store real numbers having a decimal point with high precision, for example 3.14159. It occupies 8 bytes (64 bits) of memory.

(Any three correct primitive data types with correct size: 1 mark each. Other valid answers: byte – 1 byte, short – 2 bytes, long – 8 bytes, float – 4 bytes, boolean – 1 bit)

**Answer any 3 out of the given 4 questions: Answer each question in 50 – 80 words. (3 x 4 = 12)**

**Q.(20) Answer the following questions related to a Database Management System: 1+1+1+1=4**

- (a) A database is an organised collection of related data stored in a systematic manner so that it can be easily accessed, managed and updated. Advantage over a traditional file system: a database reduces data redundancy (duplication of data), which a file system cannot control.
- (b) Degree of a relation is the total number of attributes (columns) present in a relation, whereas cardinality of a relation is the total number of tuples (rows) present in that relation.
- (c) Data redundancy means the unnecessary duplication of the same data at more than one place in a database. A DBMS reduces it by storing data at a central place in an integrated manner and sharing the same data among all users and applications instead of keeping separate copies.
- (d) Any two of: MySQL, Oracle, Microsoft SQL Server, Microsoft Access, PostgreSQL, MongoDB.

(1 mark for each correct part)

**Q.(21) (a) Write any two advantages of using an Online Reservation System. 2+2=4**

(b) Mention any two precautions that should be taken while performing online transactions.

(a) Advantages of an Online Reservation System:

1. Tickets can be booked at any time and from any place, so there is no need to stand in a queue at the counter.
2. It saves time and money, and the status of the booking, availability of seats and cancellation can be checked instantly online.

(b) Precautions while performing online transactions:

1. Always use secure websites whose address begins with https:// and carry out transactions only on a trusted, private network.
2. Never share the password, PIN, OTP or card details with anyone, use strong passwords and log out properly after completing the transaction.

(1 mark each for any two correct points in each part)

**Q.(22) Explain Switch Case with proper syntax and example.**

**4**

The **switch-case** statement in Java is used to execute one block of code from multiple choices based on the value of an expression. It is an alternative to using multiple `if-else-if` statements.

```
switch (expression) {
```

```
    case value1:
```

```
        // statements
```

```
        break;
```

```
    case value2:
```

```
        // statements
```

```
        break;
```

```
    case value3:
```

```
        // statements
```

```
        break;
```

default:

```
// statements
```

```
}
```

Example:

```
public class Main {  
    public static void main(String[] args) {  
        int day = 2;  
  
        switch (day) {  
            case 1:  
                System.out.println("Monday");  
                break;  
  
            case 2:  
                System.out.println("Tuesday");  
                break;  
  
            case 3:  
                System.out.println("Wednesday");  
                break;  
  
            default:  
                System.out.println("Invalid day");  
        }  
    }  
}
```

**Q.(23) (a) Write a Java program to perform the following tasks: 2+2=4**

```
public class Salary {  
    public static void main(String[] args) {  
        double basicSalary = 50000;  
        double allowance = 0.5 * basicSalary;  
        double totalSalary = basicSalary + allowance;  
        System.out.println("Total Salary = " + totalSalary);  
    }  
}
```

(Total Salary = 75000.0) (2 marks for a correct program; marks may be given for any correct equivalent code)

(b) What will be the output of the following Java program when executed?

## Output:

The `while` loop starts with `i = 15` and increases `i` by `2` each time until `i` becomes greater than `25`.

```
Value = 15  
Value = 17  
Value = 19  
Value = 21  
Value = 23  
Value = 25
```

**Answer:** The program prints the values from **15 to 25**, with an increment of **2**.

**\*\*\*\*\* END OF MARKING SCHEME – SET - 1 \*\*\*\*\***