



ST. JOSEPH'S COLLEGE, PRAYAGRAJ

HALF-YEARLY EXAMINATION 2025-26

COMPUTER APPLICATIONS

CLASS – IX

TIME: 2 Hours

MM: 100

This Paper is divided into two Sections. Attempt all questions from **Section A** and **any four** questions from **Section B**.
The intended marks for questions or parts of questions are given in brackets[]

SECTION – A [40 Marks]

(Attempt all questions from this Section)

Question 1. Choose the correct answers to the questions from the given options.

[20]

(i) Scanner class methods is found in which package

- (a) java.util
- (b) java.lang
- (c) java.awt
- (d) java.io

(ii) What is the size of the int data type in Java?

- (a) 2 bytes
- (b) 4 bytes
- (c) 8 bytes
- (d) None of above

(iii) `int i = Math.round(5.7); System.out.println(i);` Output is

- (a) 6
- (b) Error
- (c) 6.0
- (d) 5.0

(iv) are predefined words reserved by Java compiler.

- (a) special words
- (b) keywords
- (c) literal
- (d) object

(v) `float a=null; System.out.println(a);` Output is:

- (a) error
- (b) 0
- (c) 0.0f
- (d) null

(vi) `int x = 5, y = 0; System.out.println((y != 0) && (x / y > 1));`

- (a) true
- (b) compilation error
- (c) 5
- (d) false

(vii) In Java, an *object* is:

- (a) A reserved keyword
- (b) An instance of a class
- (c) A function inside a class
- (d) A data type

(viii) Which of the following operators in Java has the highest precedence?

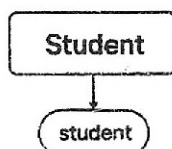
- (a) + (Addition)
- (b) = (Assignment)
- (c) * (Multiplication)
- (d) && (Logical AND)

(ix) Which data type should be used in Java to store a single character like A or z?

- (a) int
- (b) char
- (c) boolean
- (d) String

(x)

Which of the following best describes the relationship between "Student" and the object shown?



- (a) a class
- (b) a variable
- (c) method
- (d) an object



- (vi) What is implicit and explicit conversion? Give examples. [2]
 (vii) What are literals? Give any two examples. [2]
 (viii) Write any two differences between Primitive and Non-primitive data types [2]
 (ix) What are the values of x and y when the following statement are executed [2]
 int a=63,b=36;
 boolean x=(a>b)? true:false;
 int y=(a<b)?a:b;
 (x) What is the use of "\t" and "\n" in java? [2]

SECTION – B [60 Marks]

(Answer any four questions from this Section)

The answers in this section should consist of the programs in either BlueJ environment or any program environment with Java as the base. Each program should be written using variable description/mnemonic codes so that the logic of the program is clearly depicted. Flowcharts and algorithms are not required.

Question 3. Write a program to input x and y values of two points A and B. Calculate the distance between the two points using the formula: The two points are A(x1,y1) and B(x2,y2). [15]

$$\text{Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Question 5. [15]

To input three real numbers using Scanner class, calculate the roots of the quadratic equation using the following formula:

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Question 6 Write a java program to print the following characters in the below format [15]
 using ASCII code value.

J,A,M,E,S, . ,G,O,S,L,I,N,G

Question 7. [15]

You are required to design a Java program for a departmental store to generate a Shopping Bill for a customer. Use the Scanner class to accept the following inputs from the user:

- Customer Name (String)
- Price of Product 1 (double)
- Price of Product 2 (double)

Discount: 10% on total amount

Perform the following calculations using operators and Math class methods:

• Total Price = sum of two product prices	• Discount Amount = (Total × Discount%) ÷ 100
• Amount after Discount = Total Price – Discount Amount	• Rounded Bill = Use Math.round() to round off the final bill
• Find the highest price among the two. Use Math.max().	

Print the bill in a clear and well-formatted manner showing:

- Customer name
- Prices of all products
- Total amount before discount
- Total Discounted given to customer in Rs
- Total Amount after discount
- Display the highest price among the two product

Question 8 Write a java program to print the following in below format using escape sequences: [15]

S.No	Customer Name	Age	City
1	Ravi	20	Delhi
2	Sita	25	Mumbai
3	Amit	22	Chennai
4	Neha	30	Kolkata
5	Arjun	28	Bengaluru



- (xi) Which of the following Scanner methods is used to read an entire line of text (including spaces) from the user?
- (a) nextInt() (b) nextLine()
(c) next() (d) nextDouble()

(xii) **Assertion (A):** Math.sqrt(25) returns 5.0.

Reason (R): Methods in the Math class always return integer results if the answer is a whole number

- (a) Both A and R are true, and R is the correct explanation of A. (b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true but R is false. (d) A is false but R is true.
- (xiii) In a **school system**, "Student" is a blueprint with properties like name, age, and roll number. Each enrolled learner (Aditi, Rohan, Priya) is a real instance of that blueprint. What are Aditi, Rohan, and Priya in Java terms?
- (a) Classes (b) Objects
(c) Methods (d) Variables

(xiv) **Assertion (A):** A boolean variable in Java can store true, false

Reason (R): Boolean is an integer-based type in Java, where true = 1 and false = 0.

- (a) Both A and R are true, and R is the correct explanation of A. (b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true but R is false. (d) A is false but R is true.
- (xv) In a library system, a student's age is stored as a whole number, and the fine amount is stored with decimal values. Which data types should be used?
- (a) int for age, double for fine (b) char for age, float for fine
(c) boolean for age, String for fine (d) String for both
- (xvi) During compilation process, Java source code is converted to bytecode which is
- (a) machine dependent code (b) machine-independent
(c) economical (d) multithreaded

(xvii) A smart door lock opens only if the correct PIN is entered OR the fingerprint matches. Which operator is this?



- (a) && (b) %
(c) || (d) !
- (xviii) At a **ticket counter**, the clerk asks: "Enter your name" → text; "Enter your age" → number "Enter ticket price" → decimal. Which Java tool acts like this clerk by reading user inputs?
- (a) System (b) Scanner
(c) Math (d) String
- (xix) "++" is known asoperator
- (a) relational (b) logical
(c) increment (d) decrement
- (xx) While naming a identifier, we must start with.....
- (a) letter (b) underscore (_)
(c) dollar(\$) (d) All of these

Question 2.

- (i) Write Java expression for:

$$\sqrt[3]{x} + \sqrt{y}$$

- (ii) If int a=20,b=15; b+=a++ * 2 / a++ + b;
- (iii) Name the type of error(syntax, runtime, logical):
- a) Division of a variable that contains a value of zero
b) Missing semicolon
- (iv) What is the difference between float and double data types in terms of size and range
- (v) Write a short note on package.

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