ST. JOSEPH'S COLLEGE, PRAYAGRAJ

HALF YEARLY EXAMINATION 2024

COMPUTER APPLICATIONS

TIME: 2 Hours **CLASS – IX** **MM: 100**

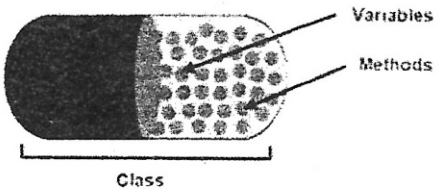
This paper is divided into two Sections.
Attempt **all** questions from Section –A, and **any four** questions from Section – B.
The intended marks for questions or parts of questions are given in brackets [ ]

SECTION – A

(Attempt all questions from this Section. Each question carry one mark)

Q 1) Choose the correct answers to the questions from the given options: **[20]**

1. Name the feature of Java depicted in the below picture



a) Encapsulation b) Polymorphism c) Abstraction d) Inheritance

2. Arrange the following data types in ascending order of hierarchy:
a) Float b) int c) double d) long

3. Identify the output:
boolean name = true;
System.out.println(!name);
a) True b) false c) Error d) null

4. Assertion: Integer class can be used in the program without calling a package
Reason: It belong to the default package java.lang
a) Both Assertion (A) and Reason (R) are true and Reason(R) is the correct explanation of Assertion (A)
b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion (A)
c) Assertion (A) is true and Reason (R) is false
d) Assertion (A) is false and Reason(R) is True

5. A keyword used to call a package in the program
a) Import b) java.util c) Import d) None of these

6. What is the output of the following:
double a1=Math.round(4.5);
a) 5.0 b) 4.0 c) 4.6 d) 5.5

7. Which keyword is used to define a constant variable in Java?
a) Final b) static c) const d) None of these

8. Name the type of error in the below code:
int x=100; int y=0; System.out.println(x/y);
a) Logical error b) Runtime error c) Syntax error d) No error

9. If the value of x = 5: then 5 * ++x; will give you
a) 25 b) 30 c) 20 d) 20

10. What is the value of n after execution
char ch ='d';
int n = ch + 5;
System.out.println(n);
a) 100 b) 110 c) 95 d) 105

11. What is the output: If the value of x=1500, what will be the value of ans after the following statement is executed?
ans= x > 1200 ? 200 : 100;
a) 200 b) 100 c) 1200 d) 1500

12. if int x=5; then x=x++ *2 + 3 * --x;
a) 15 b) 10 c) 20 d) 25

13. Which of the following is valid comment
a) /*comment */ b)/*comment c) // comment d)*/comment */

14. What is the output of: Math.ceil(-15.10);
a) 16.0 b) -15.0 c) 15.0 d) -16.0

15. What is the size of int data type in bytes:
a) 2 byte b) 1 byte c) 4 byte d) 8 byte

16. The output of Math.round(6.6) + Math.ceil(3.4) is:
    a) 9.0 b) 11.0 c) 10.0 d) 11
17. The expression which uses > = operator is known as:
    a) Relational b) logical c) arithmetic d) assignment
18. Which of the following is a valid java keyword:
    a) Catch b) Private c) New d) new
19. System.out.println(Math.pow(2,5));
    a) 32 b) 16.0 c) 32.0 d) 32
20. The default value of boolean variable is:
    a) False b) 0 c) false d) True

Q 2)

1. Give the output of the following Math functions: [2]
   a) Math.floor(-4.7);
   b) Math.ceil(3.4) + Math.pow(2,3);
2. Discuss two rules for naming an identifier in java. [2]
3. Discuss any two types of error that can occur in a java program. [2]
4. What is Data type conversion in java. Explain the two types of conversion [2]
5. Observe the following code segments and predict the data type of r, and give reason [2]
   int p; double q; r= p+q;
   System.out.println(r);
6. If m=5 and n=2, What will be the output: [2]
   a) m - = n b) n = m + m/n
7. Evaluate the value of n, **if value of p=5 and q=19**: [2]
   int n=(q - p) > (p - q) ? (q - p) : (p - q);
8. Explain: [2]
   a) What is the difference between float and double literal?
   b) What are keywords? Give examples
9. What is a package? Discuss its types give example [2]
10. Write the Java expression for option (a) , and give the output of option (b) [2]
    a) T= $\frac{\sqrt{b^2+4ac}}{2a}$
    b) double r1= Math.sqrt(Math.ceil(15.3));

SECTION – B

(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.

Q 3)

1. Write a program to take the length, breadth of a rectangle as input. Find its area, [8] perimeter and Diagonal of rectangle, and print the details. [8]
   Area=length* breadth ; Perimeter=2*(length + breadth); and
   Diagonal of rectangle $D=\sqrt{length^2 + breadth^2}$
2. Write a program to input the values of 'u' and 'v'. Find the value of f=(u*v)/(u+v) and print the value of 'f'. [7]

Q 4) [8]

1. Write a program asking the user to enter the following details in the following data types, and print the details with proper message.

Input Value	Data type
a) First Name	String
b) Age	int
c) Phone Number	long
d) Salary	float
e) Address	String

2. Write a program to input the rainfall on three consecutive days and find the average. [7]

Q 5) Write a program to accept the value of a,b. Print the value of d and x.

a) d=$(a + b)^2 - 2ab$ [8]

b) x= $\sqrt{a^2 + b^2}$ [7]

Q 6)

1. Write a program to input marks in three subjects. Calculate and print the sum and average of three subject marks. [8]
2. Write a program to accept the value of a,b,c and print the output or value of X, based on the below equation: [7]

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

Q 7)

1. Write a program to input the side of a square. Find the area and perimeter of the square. [8]
   A=s*s; P=4*s;
2. Write a program asking the user to enter two numbers. Print the greatest or maximum number using only Ternary Operator. [7]

Q 8) [8]

1. Write a program to accept date, consumer name, and total units of electricity consumed. Generate the Electricity Bill for that consumer and print the details in the following format. Price of one unit of electricity = 6.29 Rs per unit. For e.g.

   Date: 25/September/2024
   Name of the Consumer : James Martin
   Total units consumed : 200 units
   Total Electricity Bill : 200 * 6.29 = Rs. 1258.0

2. Arun purchased a smart phone from a wholesale market at a Cost Price of 10,000 Rs. The very next day he sold that phone to his friend Sachin at a Selling Price of 10,500 Rs.
   Find out the total profit and profit percentage, he earned on selling that smart phone to Sachin. [7]

   Take Cost Price and Selling Price as input from the user, and Print the details.
   Selling Price= sp
   Cost Price=cp
   Profit=sp-cp;
   Profit Percentage(%)=(Profit/cp) *100