



**ST. JOSEPH'S COLLEGE, PRAYGAGRAJ**  
**FINAL EXAMINATION- 2024**  
**COMPUTER APPLICATIONS**  
**CLASS- 9**

**MAXIMUM MARKS: 100**

**TIME: 2 HOURS**

*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.)**

**Question 1.**

**Choose the correct answer and write the correct option.**

**[20]**

- i. Encapsulation is supported by.....
  - a) Classes
  - b) Methods
  - c) Objects
  - d) None of these
- ii. Java offers ..... types of tokens.
  - a) 4
  - b) 7
  - c) 6
  - d) 5
- iii. Which are the compatible data types for Type Promotion or Type Casting?
  - a) byte, short, char
  - b) float, long, double
  - c) char, int, float
  - d) All of these
- iv. Consider the following object declaration statement:  
Scanner objectName= new Scanner (System.in);  
What is **System.in** in this declaration?
  - a) Class which points input device
  - b) Reference to input stream
  - c) Reference to computer system
  - d) None of these
- v. After compilation of a Java program which code is generated?
  - a) Executable code (.exe)
  - b) Assembly code (.asm)
  - c) Byte code (.class)
  - d) Object code (.obj)
- vi. The operator '&&' can return .....value.
  - a) integer
  - b) boolean
  - c) character
  - d) integer or boolean
- vii. What is the output of the following code?

```
int i=0;
for(i = 0; i < 5; i++)
{
continue;
}
System.out.println(i);
```

  - a) 5
  - b) 0
  - c) 4
  - d) Compilation error



- viii. "Execution of one or more statement up to a limit" is known as
- a) Condition
  - b) Loop
  - c) Return
  - d) None of these
- ix. Variable that is declared inside the body of a method is termed as:
- a) Instance variable
  - b) Local variable
  - c) Static variable
  - d) None of these
- x. What makes Java platform independent?
- a) Advanced programming language
  - b) It uses bytecode that executes over JVM
  - c) Class compilation
  - d) Object oriented programming language
- xi. What is the order of precedence (highest to lowest) of following operators?
- 1. &&
  - 2. ||
  - 3.?:
  - a)  $1 > 2 > 3$
  - b)  $2 > 1 > 3$
  - c)  $3 > 2 > 1$
  - d)  $2 > 3 > 1$
- xii. What is the entry point of a program in Java?
- a) main () method
  - b) main class
  - c) The first line of code
  - d) Last line of code
- xiii. What will be the output of System.out.println((1/1.0) - (1/-1.0))?
- a) 1.0
  - b) -2.0
  - c) -1.0
  - d) 2.0
- xiv. Inheritance is supported by.....
- a) Objects
  - b) Methods
  - c) Classes
  - d) Both (a) &(c)
- xv. Which method does not store String value after space?
- a) next()
  - b) nextLine()
  - c) nextString
  - d) Both a and b
- xvi. Fall-through in a switch case statement.....
- a) Prevents the next case after the matching block to be executed
  - b) Occurs in switch-case statements when we forget to add a break statement
  - c) No fall through occurs in switch case
  - d) None of these
- xvii. Which type of casting is lossy in Java?
- a) Widening typecasting
  - b) Narrowing typecasting
  - c) Manual typecasting
  - d) Both a and b
- xviii. A loop which runs forever, is known as
- a) Entry controlled loop
  - b) Infinite loop
  - c) Null loop
  - d) Exit controlled loop
- xix. Escape sequence for horizontal tab is.....
- a) \t
  - b) \\
  - c) \n
  - d) \r



- xx. Which of the following is true about Java byte code?
- a) It is another name for java source file that contain the information about the hardware.
  - b) It is a binary code generated by the Java Virtual Machine for operating system.
  - c) It is an intermediate code generated by the java compiler for Java Virtual Machine.
  - d) None of these

## Question 2.

- i. What do you mean by an *entry-controlled* statement. Give example. [2]
- ii. Write a Java expression for the following: [2]
  - a.  $x^2 + 2xy$
  - b.  $0.05 - yx^3/x - y$
- iii. Define *Accumulators*. [2]
- iv. Distinguish between *if else* and *switch case* statement. Give two points each. [2]
- v. What are *Delimiters*? [2]
- vi. Give the *output* of following code and mention how many times the loop will execute? [2]

```
int i;
for(i=5;i>=1;i--)
{
if (i%2==1)
continue;
System.out.print(i+ " ");
}
```
- vii. Differentiate between *while* and *do-while* loop? [2]
- viii. If the value of **basic=1500**, what will be the value of **tax** after the following statement is executed? [2]

```
tax=basic > 1200 ? 200 : 100;
```
- ix. What are *Nested Loops*? Give one example. [2]
- x. What will be the value of variable **X** after the following code is executed? [2]
  - a.  $X=20;$   
 $Y=10;$   
 $X=X+(Y++);$
  - b.  $X=20;$   
 $Y=12;$   
 $X=X(--Y);$

## 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* so that the logic of the program is clearly depicted.

Flowcharts and algorithms are not required.



### Question 3.

Write a program to *input the values of three coefficients* of a quadratic equation.

$$(AX^2 + BX + C = 0)$$

Find the roots of the equation and display them with proper message, stating whether they are *real, imaginary, or equal*. [15]

### Question 4.

Write a program to *input 20 letters*. Find and display the *number of vowels* and *number of consonants* present in the given letters. [15]

### Question 5.

Using the switch statement, write a menu-driven program to do the following:

A. To calculate the sum of the following series:

$$\text{sum} = \frac{1}{4} + \frac{1}{8} + \frac{1}{12} + \dots \text{ upto } n \text{ terms}$$

B. To display the following series:

1    3    6    10    15    21    28    36    45    55

For an incorrect option, an appropriate error message should be displayed. [15]

### Question 6.

During sale, a shop offers discount on the total purchase. If the purchase is less than ₹ 1000, the rate of discount is only 5%. The discount rate is 10% for amount of purchase from ₹1000 and above but less than ₹5000. For any purchase whose total is ₹5000 or above. The rate of discount is 15%.

Write a Java program which will:

- i) *Take the amount of purchase.*
- ii) *Find the discount amount.*
- iii) *Print the amount to be paid*

[15]

### Question 7.

Using the switch statement, write a menu driven program to do the following:

A. To display the following pattern using **iteration statement**:

```
1
1 0
1 0 1
1 0 1 0
1 0 1 0 1
```

B. To display the following pattern using **iteration statement**:

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

For an incorrect option, an appropriate error message should be displayed. [15]

### Question 8.

Write a program in java to *input a number* and check whether it is an *automorphic number* or not.  
*Hint: A number is called an Automorphic number if and only if its square ends in the same digits as the number itself.*

*Input: num = 25*

*Output: Automorphic Number*

*As 25\*25 = 625*

\*\*\*\*ALL THE BEST\*\*\*\*

[15]