



**ANNUAL EXAMINATION (2023-2024)**

**CLASS- IX**

**COMPUTER APPLICATIONS MODEL PAPER**

**(Theory)**

**Full Marks – 100**

**Time – 2Hr**

*[ Answers to this paper must be written on the paper provided separately. Two sections are given. Section A all questions are compulsory Section B write any four.*

*You will not be allowed to write during the first 15 minutes.*

*This time is to be spent in reading the question paper.*

*The time given at the head of this paper is the time allowed for writing the answers.]*

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**SECTION A (40 Marks)**

**(ALL QUESTIONS ARE COMPULSORY)**

**QUESTION 1**

**[20]**

**i) Among the following, which is not an OOP'S concept?**

- (a) Encapsulation**
- (b) Exception**
- (c) Abstraction**
- (d) Polymorphism**

**ii) What will be the output of the following code segment :**

```
int p=20, q=30;  
System.out.print(p);  
System.out.print(q);
```

- a)20**
- 30**
- b) 2030**
- c) 3020**

d) None of the above

iii) Identify the error in the following code segment:

```
int a=5;
```

```
int b=a+5;
```

```
int c=c+7;
```

```
int d=a+b;
```

a) `int a=5;`

b) `int b=a+5;`

c) `int c=c+7;`

d) `int d=a+b;`

iv) There is no need to remove unreferenced objects because there is a/an \_\_\_\_\_ in Java.

a) Explicit pointers

b) Automatic Garbage Collection

c) Operator overloading

d) Constructor

v) \_\_\_\_\_ may communicate with each other through functions

a) Objects

b) Classes

c) Operators

d) All of the above

vi) Making a function to act in different forms depending on the place they are present is called \_\_\_\_\_

a) Data hiding

b) Inheritance

c) Encapsulation

d) None of the above

vii) When we define a class it just creates \_\_\_\_\_

**a) Template**

b) Memory

c) Object

d) Variable

viii) \_\_\_\_\_ is used if a specified condition is true

a) else

**b) if**

c) else if

d) None of the above

ix) \_\_\_\_\_ is used to specify many alternative blocks of code to be executed

a) else

b) else if

**c) switch**

d) All of the above

x) The “else if” statement is used to specify a new condition if the \_\_\_\_\_

a) last condition is false

**b) first condition is false**

c) first condition is true

d) last condition is true

xi) What will be the output of the following code segment?

```
int x=5;  
if(x<5)  
System.out.print(“Hello”);  
else  
System.out.print(“World”);
```

a) Hello

b) HelloWorld

c) World

d) None of the above

xii) Short hand if else is also known as \_\_\_\_\_

a) Binary operator

b) Unary operator

c) Arithmetic operator

d) Ternary operator

xiii) The switch expression is evaluated \_\_\_\_\_

a) Once

b) Twice

c) Thrice

d) None of the above

xiv) An IF-ELSE statement is better than a SWITCH statement in which scenario below?

a) Checking for More-than condition

b) Checking for Less-than condition

c) Checking for Ranges

d) All

xv) What is the output of the Java program?

```
int a=10;
```

```
if(a==9)
```

```
    System.out.println("OK ");
```

```
else
```

```
    System.out.println("BYE");
```

a) OK BYE

**b) BYE**

c) OK

d) None

xvi) What is the output of the Java program?

```
int marks=29;
```

```
if(marks > 29)
```

```
    System.out.print("PASS ");
```

```
System.out.println("RANK");
```

**a) RANK**

b) PASS

c) PASS RANK

d) Compiler error

xvii) Which of these selection statements test only for equality?

a) if

b) switch

c) if & switch

**d) none of the mentioned**

xviii) Which of this statement is **incorrect**?

a) Switch statement is more efficient than a set of nested ifs

**b) Two case constants in the same switch can have identical values**

c) Switch statement can only test for equality, whereas if statement can evaluate any type of boolean expression

d) It is possible to create a nested switch statements

xix) In a switch case, when the switch value does not respond to any case then the execution transfers to:

a) A break statement

b) A default case

c) A loop

d) None of the above

xx) if((a > b) & (a > c)), then which of the statement is true?

a) b is the smallest number

b) b is the greatest number

c) a is the greatest number

d) All of the above

## QUESTION 2

a) Why Class is known as ‘Object Factory’? [2]

b) Explain the role of ‘new’ operator. [2]

c) Write the types of errors in Java programming. Explain any one. [2]

d) What is the default token separator while using scanner class? [2]

e) Why a class is known as composite data type? [2]

f) Examine the following code. How many times will the nested loop run? [2]

```
for (inti = 1; i <= 3; i++)  
{  
    for (int j = 1; j <= i; j++)  
    {}  
}
```

g) Examine the following code. Is there anything that will prevent it from processing? [2]

```
for (int i=1 ; i <= 3; i++)  
{
```

```
for (int j=1 ; j <= 3; j++)  
{ }
```

**h) Convert the following segment into equivalence for loop.**

**[2]**

```
int i=0;  
while(i<=20)  
{  
System.out.print(i+" ");  
i++;  
}
```

**i) Give the output of the following program:**

**[2]**

```
class Output1  
{  
static void find()  
{  
int n=1234, d ,s=0;  
while(n!=0)  
{  
d=n%10;  
s=s*10+d;  
n=n/10;  
}  
System.out.println(s);  
}  
}
```

**j) Differentiate between next ( ) and nextLine( ).**

**[2]**



## **SECTION B (60 Marks)**

**(Answer any four questions from this Section)**

*[ The answer in this Section should consist of the Program in either in BlueJ environment or any program environment with Java as the base. Each program should be written using Variable descriptions/Mnemonic Codes such that the logic of the program is clearly depicted.*

*Flow-Charts & Algorithms are not required.]*

### **Question 3**

Imagine that you are a time keeper at the FI Grand Prix. You keep a record of the time taken by a car to complete a lap in seconds. For easier data keeping, the boss asks you to record the time in minutes and seconds.

Write a code that takes time in seconds as input. Show the time in minutes and seconds.

Eg. Input – Time taken : 254 seconds

Output – The time taken is 4 minutes and 14 seconds [15]

### **Question 4**

Write a program to input 10 integers and find the smallest perfect number if any. [15]

### **Question 5**

WAP in java in java to display the following pattern [15]

i)

1

2 3

4 5 6

7 8 9 10

11 12 13 14 15

16 17 18 19 20 21

22 23 24 25 26 27 28



### **Question 6**

The volume of solids, viz. cuboid, cylinder and cone can be calculated by the Formula:

Volume of a cuboid: ( $v = l \times b \times h$ )

Volume of a cylinder: ( $v = \pi \times r^2 \times h$ )

Volume of a cone: ( $v = 1/3 \times \pi \times r^2 \times h$ ) ( $\pi = 22/7$ )

Using a switch case statement, write a program to find the volume of different solids by taking suitable variables and data types. [15]

### **Question 7**

Write a program to input 10 integers and check whether the entered numbers are in ascending order or not. [15]

For Example,

INPUT: Enter 10 numbers: 10 12 13 25 45 55 67 78 106 122

OUTPUT: The numbers are in ascending order.

INPUT: Enter 10 numbers: 25 34 56 67 12 32 43 21 23 111

OUTPUT: The numbers are not in ascending order

### **Question 8**

Write a program to input a number and print all its prime factors using prime factorization. [15]

For Example, INPUT:

Enter an integer: 24

OUTPUT: Prime Factors using Prime Factorisation are: 2 2 2 3