



Estd. 1861

**BOYS' HIGH SCHOOL AND COLLEGE**  
**THIRD TERM EXAMINATION (2023-24)**  
**COMPUTER APPLICATIONS**  
**CLASS – IX**

**Time: 2 hours**

**MM:100**

**SECTION A**

*(Attempt all questions from this Section.)*

**Question 1**

**[20]**

Choose the correct answer and write the correct option.

- (i) Software \_\_\_\_\_ refers to the act of copying a genuine software and selling their illegal copies.
  - a) private
  - b) print
  - c) piracy
  - d) permanent
- (ii) 'O' in WORA stands for \_\_\_\_\_.
  - a) Output
  - b) Object
  - c) Once
  - d) Open
- (iii)  $\text{Math.round}(14.7) + \text{Math.ceil}(4.2) =$  \_\_\_\_\_.
  - a) 18.0
  - b) 19.0
  - c) 20.0
  - d) 20
- (iv) An operator that works with \_\_\_\_\_ operands or expressions is call ternary operator.
  - a) one
  - b) two
  - c) three
  - d) four
- (v) What is the output of the following code: `int c = b % a;` when `int a = 15, b = 13;`
  - a) 13
  - b) 0
  - c) 1
  - d) 2
- (vi) An expression has two parts \_\_\_\_\_ and operator.
  - a) operand
  - b) exponent
  - c) statement
  - d) none of the above
- (vii) Which package would you import for the Scanner class?
  - a) `java.util.*`
  - b) `java.awt.*`
  - c) `java.io.*`
  - d) `java.lang.*`
- (viii) The output of `Math.round(-18.5)` is -
  - a) -18
  - b) -18.0
  - c) -19
  - d) -17.0
- (ix) Which of the statements involves a fall-through?
  - a) if-else
  - b) if-else ladder
  - c) for loop
  - d) switch
- (x) The class which inherits the features of another class is known as \_\_\_\_\_ class.
  - a) sub
  - b) derived
  - c) child
  - d) all of the above
- (xi) Boolean datatype is used to test a particular condition i.e. true or false. Which of the following is a correct representation?
  - a) `boolean a = TRUE;`
  - b) `boolean a = 'true';`
  - c) `boolean a = "true";`
  - d) `boolean a = true;`
- (xii) Which of the following is not a valid identifier?
  - a) Name
  - b) `_ABC`
  - c) `cn_21`
  - d) `cp+ps`
- (xiii) What will be the output of the following code:
 

```
int a = -5;
System.out.println ( -a++ );
```

  - a) -5
  - b) 5
  - c) -6
  - d) 6
- (xiv) Which of the following is not a Java reserved word?
  - a) false
  - b) token
  - c) default
  - d) import
- (xv) `Math.pow()` can work on \_\_\_\_\_ values.
  - a) positive
  - b) negative
  - c) both 'a' & 'b'
  - d) none of the above



- (xvi) How many arguments can be passed into Math.random( )?  
 a) 2 c) 0  
 b) 1 d) 3
- (xvii) Which loop ends with a semi-colon?  
 a) for c) do-while  
 b) while d) both 'a' & 'b'
- (xviii) What will be the value of a & b, if int b = ++a + a++; where int a = 10?  
 a) 11, 10 c) 11, 22  
 b) 22, 11 d) 12, 22
- (xix) \_\_\_\_\_ is a division of philosophy that deals with moral ideologies.  
 a) Intellectual c) Copyright  
 b) Patents d) Ethics
- (xx) Math.ceil ( ) returns the \_\_\_\_\_ integer value greater then the number that is provided in the argument.  
 a) largest c) central  
 b) equal d) smallest

Question 2

- (i) What is the difference between = and == operator? [2]
- (ii) Write a Java expression for:  $z = a^2 + b^3 - c^2$  [2]
- (iii) Give the output of the following code, where double x = 8.3, y = 3.8 :  
 System.out.println( Math.max (Math.ceil (x), Math.floor (y) ) ); [2]
- (iv) Write any two things we can do with Internet. [2]
- (v) What is the output of the following code: [2]  

```
int i = 1;
while (i < 6)
{
System.out.print ((i+2) + " ");
i = i+2;
}
```
- (vi) Calculate the following code and give the output:  
 int z = ( + + x ) + ( - - x ) - ( + + x ) + ( - - x ) \* 5 ; ( int x = 6 ) [2]
- (vii) Convert the following from for loop to while loop: [2]  

```
for(int m=3; m<=10; m=m+2)
{
if (m = 6)
{
System.out.println(m);
}
}
```
- (viii) Define Copyright. [2]
- (ix) Find the error, correct them and rewrite the code: [2]  

```
for ( int i = 1, i <= 10; i++ )
{
System.out.print( i * i + " : " )
}
```
- (x) Define Polymorphism. [2]



## SECTION B

(Attempt any four questions from this Section.)

Each program should be written using variable description so that the logic of the program is clearly depicted.

### Question 3

[15]

A company has announced the following scheme for its sales person according to the following criteria:

Number of sales	Commission
Up to 50 products	5%
51 to 75 products	7.5%
76 to 100 products	10%
More than 100 products	15%

Write a program to input the name, employee ID, number of products sold and salary of the sales person. Calculate the commission on the salary and display the output in the following format:

\*\*\* EMPLOYEE DETAILS \*\*\*

Name:

Employee ID:

Number of products sold:

Total salary after commission:

[Total salary after commission = original salary + commission]

### Question 4

[15]

Write a program to print the following pattern:

```
a) A                               b) 1
   A B                             2 3
   A B C                             4 5 6
   A B C D                           7 8 9 10
   A B C D E                          11 12 13 14 15
```

### Question 5

[15]

Write a menu driven program to calculate the following:

i) Volume of a cylinder =  $\pi r^2 h$

ii) Surface area of cylinder =  $2\pi r h + 2\pi r^2$

iii) Lateral surface area of cylinder =  $2\pi r h$

For an incorrect choice, an appropriate message should be displayed.

### Question 6

a) Write a program to print the first 10 numbers of the Fibonacci series 0, 1, 1, 2, 3, 5, 8,..... [7]

b) Write a program to print the following series: [8]

1/3, 2/6, 3/9, 4/12, ..... 10/30.

### Question 7

[15]

Write a menu driven program to print the following pattern:

```
a) 1                               b) ###
   @@                             ###
   1 1 1                           ###
   @ @ @ @
```

For an incorrect choice, an appropriate message should be displayed.

### Question 8

[15]

Write a program to accept a number and check whether the given number is Spy or not.

[ A number is said to be a Spy number if the sum of the digits is equal to the product of the digits of a number.

Example: 1124 → sum of digits = 1 + 1 + 2 + 4 = 8 and product of digits = 1 \* 1 \* 2 \* 4 = 8 ]

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