

Greenlawns School Worli

Computer Application

Std X

Time: 2 hours

Date : 6/1/26

Max Marks : 100

COMPUTER APPLICATIONS

(Theory)

(Two Hours)

Answers to this Paper must be written on the paper provided separately.

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.

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)

Answer all questions from this Section

I. An object belonging to a particular class is known as a/an of that class.

1. Interface
2. Instance
3. Alias
4. Member

II. Give the output of Math.ceil(-0.6).

1. -1.6
2. -1.5
3. -1.0
4. -0.0

III. Which of the following is not a valid method of the Scanner class?

1. next()
2. nextInt()
3. nextLong()

4. `nextNumber()`

IV. The statement `(1==1)? 1: 0` evaluates to

1. 0
2. 1
3. False
4. true

V. The statement `System.out.println("six " + 3 + 3);` gives the output

1. six 33
2. six 6
3. 33 six
4. 6 six

VI. The size of an array that signifies the number of elements it can store is given using brackets.

1. { }
2. []
3. ()
4. All of these

VII. Given array `int x[] = {11, 22, 33, 44};` the value of `x[1]` is

1. 11
2. 22
3. 33
4. Invalid value

VIII. While using the `toLowerCase()` method on a string containing special characters,

1. the special characters remain unaffected.
2. the special characters are converted to spaces.
3. the special characters are converted to null character.
4. the special characters are removed from the string.

IX. The `indexOf()` method returns the position of the

1. first occurrence of the specified character
2. last occurrence of the specified character
3. null character
4. '\n' character
- 5.

X. Which of the following is a primitive data type?

1. int
2. float
3. char
4. All of these

XI. Which of the following loop executes at least once?

1. while
2. for
3. do-while
4. None of these

XII. Which operator cannot be used with if-else statement?

1. <=
2. ||
3. &&
4. ?:

XIII. What will be the output of the following code?

```
int size = 2;
if (size < 0)
    System.out.println("Small");
else if (size == 0)
    System.out.println("Medium");
else
    System.out.println("Large");
```

1. Small
2. Large
3. Medium
4. Runtime error

XIV. Consider the following code snippet:

```
if ( c > d)
    x = c;
else
    x = d;
```

Choose the correct option if the code mentioned above is rewritten using the ternary operator:

1. x = (c > d) ? c : d;

2. $x = (c > d) ? d : c;$
3. $x = (c > d) ? c : c;$
4. $x = (c > d) ? d : d;$

XV. A method can return

1. any number of values
2. 2 values
3. only 1 value
4. 3 values

XVI. If a method returns a value, then it must be

1. of the same data type as defined in its prototype
2. void type
3. double type
4. boolean type

XVII. The statement $i = i + 1$ is equivalent to

1. $i++$
2. $i += 1$
3. $++i$
4. All of these

XVIII. Assuming $x = 1$ with the following code snippet:

```
int y = --x;
```

Which one of the following is true?

1. $x=1, y=1$
2. $x=0, y=0$
3. $x=1, y=0$
4. $x=0, y=1$

XIX. The return type of the equals() method is

1. int
2. char
3. boolean
4. void

XX. Which one of the given statements is true for the following statement?
`string1.compareTo(string2)`

1. if $string1 > string2$ the result will be a negative integer i.e. < 0 .
2. if $string1 > string2$ the result will be a positive integer i.e. > 0 .

3. if string1 > string2 the result will be 0.
4. None of the above

Question 2

- a) Difference between linear search and binary search.
- b) Difference between constructor and method.
- c) Difference between impure and pure function.
- d) Difference between implicit and explicit.
- e) Write the syntax of creating a object of a class
- f) Explain fall through
- g) Name two types of java program.
- h) What is a an infinite loop give one example?
- i) Convert the following statement in java form

$$2 \pi r^2$$

- j) Convert the for loop into while loop

```
for(int i=10;x>=0;x--)
{
    System.out.println(x);
}
```

SECTION B (60 Marks)

(Attempt 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

Define a class to accept a number and check whether it is a Superspy number or not. A number is called Superspy if the sum of digit equals the 1 number of digits.

Eg: Input: 1021

Output: Superdry number [sum of the digits = 1+0+2+1 = 4, number of digits = 4]

Question 4

Write a program by using a class to input an integer array of 10 members as instance variable.

Find the greatest number and smallest number

Question 5

Sponge Iron company announces an increment for their employees on seniority basis as per the given conditions:

Age	increment
56 years and above	20% of basic
Above 45 and below 56 year	15% of basic
Upto 45	10% of basic

Class	Increment
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Data members

String name	Name of the employee
double basic	basic pay of employee
int age	age of the employee

Member methods:

void getdata(String n,double b,int a)	to accept name, basic and age of the employee
void calculate()	to find the increment and update basic
void display()	to display age and update basic in the format given below:

Name	Age	Updated Basic
XXX	XX	XXXXXXXXXX

Question 6

Write a program to create a class with method name volume using function overloading that computes the volume of a cube

$$= s \times s \times s$$

the volume of a sphere

$$= 4/3 \pi r^3$$

the volume of a cuboid

$$= l \times b \times h$$

Question 7

Write two separate program to generate the following pattern :

a)

1

12

123

1234

12345

b) GREAT

GRE

GRE

GR

G

Question 8

Write a program to input a sentence and convert all small letter to capital and vice versa.