

COMPUTER APPLICATIONS

2022-2023

SECTION A (40 Marks)

(Attempt all questions from this Section.)

Question 1

Choose the correct answers to the questions from the given options

- I. A mechanism where one class acquires the properties of another class:
 - (a) Polymorphism
 - (b) Inheritance
 - (c) Encapsulation
 - (d) Abstraction
- II. Identify the type of operator &&:
 - (a) ternary
 - (b) unary
 - (c) logical
 - (d) relational
- III. The Scanner class method used to accept words with space:
 - (a) next()
 - (b) nextLine()
 - (c) Next()
 - (d) nextString()
- IV. The keyword used to call package in the program:
 - (a) extends
 - (b) export
 - (c) import
 - (d) package

V. What value will `Math.sqrt (Math.ceil (15.3))` return?

(a) 16.0

(b) 16

(c) 4.0

(d) 5.0

VI. The absence of which statement leads to fall through situation in switch case statement?

(a) continue

(b) break

(c) return

(d) `System.exit(0)`

VII. State the type of loop in the given program segment:

```
for (int i = 5; i != 0; i - = 2)
```

```
System.out.println(i);
```

(a) finite

(b) infinite

(c) null

(d) fixed

VIII. Write a method prototype name `check()` which takes an integer argument and returns a char:

(a) `char check()`

(b) `void check (int x)`

(c) `check (int x)`

(d) `char check (int x)`

IX. The number of values that a method can return is:

(a) 1

(b) 2

(c) 3

(d) 4

- X. Predict the output of the following code snippet: String P = "20", Q = "22";

```
int a = Integer.parseInt(P);
```

```
int b = Integer.valueOf(Q);
```

```
System.out.println(a+""+b);
```

(a) 20

(b) 20 22

(c) 2220

(d) 22

- XI. The String class method to join two strings is:

(a) concat(String)

(b) <string>.join(string)

(c) concat(char)

(d) Concat()

- XII. The output of the function "COMPOSITION".substring(3, 6):

(a) POSI

(b) POS

(c) MPO

(d) MPOS

- XIII. int x = (int) 32.8; is an example of _____ typecasting.

(a) implicit

(b) automatic

(c) explicit

(d) coercion

- XIV. The code obtained after compilation is known as:

- (a) source code
- (b) object code
- (c) machine code
- (d) java byte code**

XV. Missing a semicolon in a statement is what type of error?

- (a) Logical
- (b) Syntax**
- (c) Runtime
- (d) No error

XVI. Consider the following program segment and select the output of the same when $n = 10$:

```
switch(n)
{case 10 : System.out.println(n*2);
case 4 : System.out.println(n*4); break;
default : System.out.println(n);
}
```

- (a) 20**
- 40**
- (b) 10
- 4
- (c) 20, 40
- (d) 10
- 10

XVII. A method which does not modify the value of variables is termed as:

- (a) Impure method
- (b) Pure method**
- (c) Primitive method

(d) User defined method

XVIII. When an object of a Wrapper class is converted to its corresponding primitive data type, it is called as _____.

(a) Boxing

(b) Explicit type conversion

(c) Unboxing

(d) Implicit type conversion

XIX. The number of bits occupied by the value 'a' are:

(a) 1 bit

(b) 2 bits

(c) 4 bits

(d) 16 bits

XX. Method which is a part of a class rather than an instance of the class is termed as:

(a) Static method

(b) Non static method

(c) Wrapper class

(d) String method

Question 2

I. Write the Java expression for $(a + b)^x$.

`Math.pow((a+b),x)`

II. Evaluate the expression when the value of $x = 4$:

$$x * --x + x++ + x$$

$$x = x * (--x + x++ + x)$$

$$x = 4 * (3 + 3 + 4)$$

$$x = 4 * (10)$$

$$x = 40$$

III. Convert the following do...while loop to for loop:

```
int x=10;
do
{x--};
System.out.print(x);
}while (x>=1);
```

Answer

```
for(int x=10;x>=1;)
{
x--;
System.out.print(x);
}
```

IV. Give the output of the following Character class methods:

(a) Character.toUpperCase ('a')

(b) Character.isLetterOrDigit('#')

Answer

(a) 'A'

(b) false

V. Rewrite the following code using the if-else statement:

```
int m= 400;
double ch = (m>300) ? (m / 10.0) * 2: (m / 20.0) - 2;
```

Answer

```
int m=400;
double ch;
if(m>300)
ch=(m/10.0)*2;
```

else

ch=(m/20.0) - 2;

VI. Give the output of the following program segment:

```
int n = 4279; int d;
```

```
while(n>0)
```

```
{
```

```
  d=n%10;
```

```
  System.out.println(d);
```

```
  n=n/100;
```

```
}
```

Output:

9

2

VII. Give the output of the following String class methods:

(a) "COMMENCEMENT" . lastIndexOf('M')

(b) "devote" . compareTo("DEVOTE")

Output:

8

32

VIII. Consider the given array and answer the questions given below:

```
int x[ ]={4,7,9,66,72,0,16};
```

(a) What is the length of the array?

(b) What is the value in x[4]?

Output:

7

72

IX. Name the following:

(a) What is an instance of the class called?

(b) The method which has same name as that of the class name.

Answer

(a) Object

(b) constructor

X. Write the value of n after execution:

```
char ch = 'd';
```

```
int n = ch + 5;
```

Answer

n=105

