

Q1 Choose the correct answers and write the correct option.

20

(i) From the given array Y [ ] [ ] = {{ 3, 4, 5}, {6, 7, 8}, {1, 2, 3}};  
The element at Y [ 2 ] [2] is:

- (a) 1 (b) 2 (c) 3 (d) 4

(ii) Decide how many searches using linear search it will require to successfully search for 2 from the below array?

15	12	2	3	4	5
----	----	---	---	---	---

- (a) 2 (b) 3 (c) 4 (d) 5

(iii) Packages in java are:

- (a) A special class (b) Groups of classes (c) A special const variable (d) None of these

(iv) Which function from String library removes the leading and trailing whitespace from the string?

- (a) proper (b) prim (c) trim (d) remove

(v) All calls to methods must have \_\_\_\_\_ after them, even if that method takes no arguments.  
As in:

myObject. methodNoArgs ();

- (a) Curly braces (b) Parentheses (c) Square brackets (d) None of these

(vi) What keyword can be found in a java class exhibiting inheritance?

- (a) Intends (b) derives (c) delivers (d) extends

(vii) In the below code snippet, what is the return type of the method?

```
Int storage (String s) {
return s. length () * 2;}
```

- (a) int (b) Boolean (c) return (d) string

(viii) What does the below routine return? Random rand = new Random ();

- (a) It returns random decimal number (b) It returns random strings.  
(c) It returns random integers. (d) It returns a null string only.

(ix) Name which block precedes the block as visible below.

```
catch (IOException e)
```

```
{
System. Out. println (" Error reading from user");
}
```

- (a) try block (b) Another catch block (c) Either (a) or (b) (d) Any code

(X) The garbage collector feature in java is used to avoid:

- (a) Memory leak (b) Memory management (c) Memory arrangement (d) Memory scope

(xi) In the class statement, "public static void main (String args [])" the keyword public stands for \_\_\_\_\_

- (a) The method is unchanging and implicitly final (b) The method does not return a value  
(c) The method is accessible to other classes. (d) None of these

(xii) The statement to invoke the default constructor of a class " State" is \_\_\_\_\_

- (a) State obj = new state; (b) State obj = State ();  
(c) State obj = new State(); (d) State obj = new State()

(xiii) Keywords are always in:

- (a) Uppercase (b) Sentence case (c) Lowercase (d) Toggle case

(xiv) View the following code and answer the question.

```
Public void Test Sample (int var)
{
    Switch (var)
    {
        Case 1:
            System. Out .println ("good");
            break;
        Case 2:
            System.out. println ('better");
            break;
        Case 3:
            System.out. println ('best");
            break;
        default:
            System.out. println ('invalid");
            break;
    }
}
```

If value 4 is passed to the function the output will be:

- (a) best (b) invalid (c) good (d) better

(xv) What is the other name of encapsulation?

- (a) Information hiding (b) Information processing (c) Information storing (d) Information reusing

(xvii) What is the name given for:

"Sometime there are two or more possible matches for an invocation of a method due to similar method Signature, so the compiler cannot determine the most specific match."

- (a) Multiple inheritance (b) Deep inheritance (c) Multiple invocation (d) Ambiguous invocation

(xviii) The constructors in a class all have the same name, but their signatures are differentiated by their:

- (a) Return types (b) Use of overloaded keyword  
(c) Parameter lists (d) None of these

(xix) Write a set of statements that would find and print the size of array ar [] = {2,5,6,7,8,9,10};

- (a) int len =ar. Length;  
System. out. println ("The size array =" +len);  
(b) int len =ar. Length();  
System. out. println ("The size array =" +len);  
(c) int len =ar. Len;  
System. out. println("The size array =" +len);  
(d) None of these

(xx) Differentiate between parseInt () and to String()

- (a) parseInt separates out the integer based on comma and to String joins the strings  
(b) parseInt returns subparts of the integer and to String converts integers to strings  
(c) ParseInt returns the string converted into an integer and to String converts any object to string  
(d) None of these

## Q2

(i) Evaluate the below java line:

```
System.out.println (isupperCase('Z'));
```

[2]

(ii) Fill in the blanks for the below code to change the array into an array that contains double the parents array.

[2]

```

Int[] x = {4, 2, 6, 12, 15, 10, 8};
For(int i = 0; i < x.length; i++)
{
    (1) _____
}

```

Print ( 2) \_\_\_\_\_);

- (iii) The below code snippet checks whether or not any character other than letter or digit is contained in the string str. Fill in the blanks of the code in order to get the code correct. [2]

```

boolean (1) _____
for (int i = 0; i < str.length; i++)
{
    If (isLetterOrDigit (charAt (i) ) == false)
    {
        System.out.println ( (2) _____ )
        (3) _____
        break;
    }
}
If (flag == false)
{
    System.out.println ("String is alphanumeric");
}

```

- (iv) How would you take the input of a single character from the keyboard in a java program? [2]
- (v) Give any one advantage of using reference type of variables. [2]
- (vi) How does the compareToIgnoreCase(String) method work? [2]
- (vii) Evaluate the following java line: [2]
- ```
"Hello".endsWith("lo") && "Conrad".startsWith("CON");
```
- (viii) Suppose that you construct a function matches() so that it returns true whenever the two strings have some matching prefix and suffix (of length at least 2) respectively. For the below call of the function, what should this (assumed correctly written function return)? [2]
- ```
"abcde".matches("rete");
```
- (ix) Which operator in java can do the same work as concat(String) of the String class? [2]
- (x) Can a class have more than one constructor specified for itself? [2]

### SECTION B

Q 3. Define a class to find the sum of first 75 natural numbers. [15]

Q 4 [15]

Define a class to accept a number and check whether it is both divisible by 11 and contains at least a substring which is also divisible by 11 For example:

99 is divisible by 11 but does not contains a number divisible by 11.

1331 is divisible by 11 and 33 that is also divisible by 11.

121 is divisible by 11 but does not contains a substring divisible by 11.

Q 5 Define a class that accepts a number and outputs the value of n, such that;

15

- When the number is even, find n such that  $2^n \cdot x$  is the number
- When the number is odd, find n such that  $2^n \cdot x + 1$  is the number

Q 6 Define a class that takes as input an integer n and takes n string as inputs. Print out all pairs of strings such

that the first string has a suffix which is a prefix of the second string. For example:

15

dam                      amicable                      blessed                      educated                      gambler  
(dam,amicable) (amicable,blessed), (amicable,educated), (blessed,educated) are such pairs.

[15]

Q 7

Define a class with the following specifications:

Class name:

student

Member variables:

rno – Roll Number

Sname – Student name

Class – The grade he/she studies in

Prerfinal, final –The pre- final and marks obtained

[Declare the variables using appropriate data types]

Member methods:

void accept ()

--- accept the details from standard input

void process ()

---- To decide the students who got more in final than the pre-final

void print ()

--- to print the details as per the following format

Rno    sname    class    pre –final    final

void main ()

--- to create an object of the class and invoke the methods.

[15]

Q 8

Design a class that takes as input an integer n from the user. Take n input from the user. Print out the digit that occurs most frequently in the entire set of numbers entered. For example: for 7 numbers,

12                      21                      34                      46                      62                      29                      98

2 occurs most frequently.