



ZIEL CLASSES

Std: X
Computer Application

PRELIMINARY REVIEW JANUARY 2023

COMPUTER APPLICATION

Marks: 100
Time: 2Hrs

Note : You will NOT be allowed to write during the first 15 minutes.

This time is to be spent in reading the paper.

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

The paper is divided into two sections.

Answer all questions from section A and any 4 from section B.

Section A is of 40 marks and section B is of 60 marks.

Marks for each question is mentioned in [] to your right.

This paper consists of EIGHT printed pages.

SECTION A (40 marks)

Answer all questions

Question 1

Choose the correct answer and write the correct option

[20]

(i) An instance of a class termed as:

- (a) Attributes
- (b) Object
- (c) Value
- (d) Message

(ii) What is the value returned by the following line in java?

```
System.out.println(Math.pow(Math.sqrt(9),Math.max(-5,5/6)));
```

- (a) 3.0
- (b) 1
- (c) 1.0
- (d) 81.0

(iii) _____ will always have parameters or arguments of reference type.

- (a) Pure function
- (b) Impure function
- (c) Specific method
- (d) None of these

(iv) The parseInt() function is a member of :

- (a) Int wrapper class
- (b) Char Wrapper Class
- (c) Float wrapper class
- (d) Integer wrapper class

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- (v) What is the value returned by the following line in java?
`System.out.println("India".compareTo("Country")+"Application".indexOf('p',1));`
(a) 3
(b) 0
(c) 7
(d) 8
- (vi) Which is the correct way of finding last index of character ch in a string x?
(a) `lastIndexOf(x,ch);`
(b) `lastIndexOf(x.ch);`
(c) `x.lastIndexOf(ch);`
(d) `ch.lastIndexOf(x);`
- (vii) The _____ keyword indicates that the value cannot be changed within the program.
(a) this
(b) final
(c) return
(d) All the above
- (viii) Scope of class variable is:
(a) Throughout the class except in static method
(b) Throughout the class
(c) Within the block in which it is shared
(d) none
- (ix) The output of `Double.parseDouble("71.25")+0.75` is:
(a) 72
(b) 72.0
(c) 71.0
(d) 71.25
- (x) What is the output of the following code?
`int a[]={65,66,67,68,69};`
`System.out.println(a[a.length/2] + a[a.length%2]);`
(a) 133
(b) 135
(c) 134
(d) 136

- (xi) What is the output of the following code?
`String s1="Apple",s2="Banana";
System.out.print(s1.toUpperCase().concat(s1.substring(0,s1.length())));
System.out.println(s1.charAt(0)==s2.charAt(1));`
(a) APPLEAptrue
(b) APPLEAppletrue
(c) APPLEApplefalse
(d) None of the above
- (xii) Name the keyword found in java class exhibiting inheritance?
(a) intends
(b) extend
(c) delivers
(d) extends
- (xiii) What does the given function returns: `Math.random()`
(a) It returns the random decimal numbers.
(b) It returns random integers between 0 and 1
(c) It returns the random decimal numbers between 0 and 1.
(d) It returns the random decimal numbers from 0 to 1.
- (xiv) In the class statement," `public static void main()`" the keyword `static` stands for ____
(a) The method is accessible to other classes.
(b) The method is accessible to other non- static methods.
(c) The method cannot access other non-static methods.
(d) None of these.
- (xv) _____ statement is to print the size of array `arr[]={2,5,7,1,9}`;
(a) `int len= arr[].length;`
(b) `int len= arr.length();`
(c) `int len= arr.length`
(d) `int len= arr[].len;`
- (xvi) In inheritance, the parent class also is known as the ____
(a) Base class
(b) Super class
(c) Either (a) or (b)
(d) None of these

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(xvii) Give the value of : where a=10, b=5 and z=11

```
z+=a++ + -b + ++a % -b
```

- (a) 25
- (b) 30
- (c) 29
- (d) 28

(xviii) Arrange the given values in descending order of their byte size:

'c', 94.245, true, 50L

- (a) 94.25,50L,'c',true
- (b) 94.25, 50L,true,'c'
- (c) 50L,true,'c',94.25
- (d) 'c', true, 50L, 94.25

(xix) What is the difference in below given statements:

```
int x=1;
```

```
Integer y= new Integer(10);
```

- (a) Both are primitive data types.
- (b) x has a primitive data type and y is an object of the wrapper class.
- (c) Both are objects of wrapper class.
- (d) None of the above

(xx) ll be the output of the below code:

```
int [] marks={ };
```

```
System.out.print(marks.length);
```

- (a) 1
- (b) null
- (c) -1
- (d) 0

Question 2:

[20]

(i) Predict the output:

```
String s1="COMPUTER",s2="APPLICATIONS";
```

```
System.out.println(s1.substring(1,5) + s2.replace('A','S'));
```

(ii) Convert the following for loop code to do while loop

```
int i=1;
```

```
for(;i<=4;i+=2)
```

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

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

...5

- (iii) Write a single line java statement for the following:
- (a) To display the first character of the string str.
 - (b) To check and print the equality between two strings x and y.
- (iv) What is call by reference? Which data types are passed by reference?
- (v) Rewrite the following decision making statements using the conditional operator.
if(x>0) value=2*x;
else if(x>0 && x<10) value =5*x;
else value=0;
- (vi) Give output for the given code:
- ```
public void main(){
 char arr[] = {'J', 'A', 'V', 'A'};
 int b = 2;
 System.out.print(arr[b++] + "\n");
 System.out.println("\t"+arr[b]); } }
```
- (vii) Give expression for:
- $$\frac{\sqrt{b^2 - 4ac}}{|2a|}$$
- (viii) Write a prototype of a function fixValue which takes two String arguments and returns an integer value.
- (ix) Explain Abstraction with real life example.
- (x) What is the function of System.exit(0) ?

## SECTION B

(Answer 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 called BookOrder with the following description  
Instance variables/Data members

- String title - The title of the book
- int unitWeight - The weight of one piece of the book
- int totalBooks - The total number of books ordered
- int totalWeight- The total weight of the books ordered
- double charges - The courier charges of the ordered books.

Member Methods:

- BookOrder() – Default constructor
- input() – Accept weight of a book and number of books ordered
- operation()- To compute the total weight and the total cost of the books.  
[Use formula : Total weight=total books\*unit weight]
- check()- find the courier charges of the order on the basis of the given table:

| Total weight(in kgs) | cost in Rs(per kg) |
|----------------------|--------------------|
| up to 50 kgs         | Rs 10,000          |
| next 30 kgs          | Rs 5000            |
| next 20 kgs          | Rs 3000            |
| above 100 kgs        | Rs 2000            |

display() - To display the details of member data along with total weight and total cost of courier.

Create an object of the class in the main method and invoke the member methods.

**Question 4**

Write a program to accept the names of 8 cities in a string array and their STD (Subscribers Trunk Dialing) codes in integer array. Search for a name of a city input by the user in the list. If found, display "Search Successful" and print the name of the city along with its STD code, or else display the message "Search Unsuccessful, No such city in the list'. (Using Binary search technique) [15]

STD[ ]= { 20,11,22,33,40,44,80,79}  
city[ ]= {Pune, New Delhi, Mumbai, Kolkata, Hyderabad, Chennai, Bangalore, Ahmedabad}

**Question 5**

Design a class to overload a method print( ) as follows:  
a. print(int ) check and print whether entered number is Dudeney number or not.  
Sum of digits = Cube root of Number

Example:  
Consider the number 512.

[15]

...7

Sum of digits =  $5 + 1 + 2 = 8$   
Cube root of 512 = 8  
hence 512 is a Dudeney number.

b. print() to print the given series

26    17    10    5    2

c. print(String) to print the alternate characters of the string along with their ASCII values.

**Question 6**

[15]

Write a class Rev to have a method called 'reverse()' to accept a String parameter 's', a start position parameter m and number of characters parameter n. The method reverses the n characters specified from position m and returns the reversed string to the main method.

Write the main method to check if starting position is less than the length of the string, and start position + number of characters to be extracted is also less than length of string. If both conditions are true, call the reverse method with 3 parameters and accept and print the reversed string.

|                 |                      |
|-----------------|----------------------|
| Example: String | Computer Application |
| m(position)     | 3                    |
| n(characters)   | 9                    |
| output          | ppA retup            |

**Question 7**

Design a class to print the given designs in two different prototypes using loops.

[15]

**DESIGN I**

1  
10  
101  
1010

**DESIGN II**

Enter a word and print in the given format.

G  
Gre  
Great

..8

**Question 8**

[15]

Write a program to store 35 numbers in an array. Find and print the following:  
Smallest number and its location in the array.  
Largest number and its location in the array.  
Second largest number in the array.

Example  $n[] = \{4, 2, 8, 1, 3\}$

largest number=8      Location =2

Smallest number=1      Location=3

Second largest number= 4

---- The End ----

*ZIEL CLASSES*

