The Brigade School Term Assessment 1 (2020-21)

Total points 95/100

Class 10 | Subject:Computer Applications | Max Marks: 100

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10 A

Part A(Marks: 40)

Answer all questions

Question 1 (a)

Name the type of error (syntax, runtime or logical error) in each case given below:
(i) Math.sqrt (36-45)
(ii) int a;b;c;
(iii) System.out.print("sum of a and b ="+(a/b));
(iv) System.out.print(sum of a and b =+(a+b));

✓ Question 1 (a) * 4/4

- ( ) (i) syntax (ii) logical (ii) runtime (iv) Syntax
- (•) (i) runtime (ii) syntax (iii)logical (iv) Syntax ✓
- ( ) (i) logical (ii) runtime (iii)syntax (iv) Syntax
- ( ) (i) syntax (ii) logical (iii)runtime (iv) Syntax

✓ Question 1 (b) In a for loop * 2/2

- (•) (a) a block of code is executed repeatedly as long as the condition is satisfied. ✓
- ( ) (b) a block of code that is executed only once if the condition is satisfied.
- ( ) both (a) and (b)
- ( ) none of the above

✓ Question 1 (c)A WHILE loop in Java executes the statements at least once even the condition is not satisfied. * 2/2

- ( ) True
- (•) False ✓

Question 1 (d) What should be the execution order, if a class has a method, main method, object and constructor as shown below?

```
public class First
{
 public First()
{
int a=0;
}
public void myMethod()
      {
     System.out.println("Method");
      }
public void First_C()
     {
     System.out.println("Constructor ");
   }
    public static void main(String[] args)
{
First c = new First();
c.First();
c.myMethod();
   } }
```

✓ Question 1 (d) 4/4

- (●) main method, object, constructor, and method ✓
- ( ) object, main method, constructor and method
- ( ) constructor, method, main method and object
- ( ) constructor, main method, object and method

Question 1 (e) What will be the output of the following program?

```
public class Test {
public static void main(String[] args) {
   int count = 1;
   while (count <= 15) {
   System.out.println(count % 2 == 1 ? "***" : "+++++");
   ++count;
      }
   }
 }
```

✓ Question 1 (e) What will be the output of the following program? * 4/4

- 15 times ***
- Both will print only once
- 8 times *** and 7 times +++++ ✓
- 15 times +++++

Question 2 (a) What is the output?

(i) Math.floor(3.6)
(ii) if x=3, y=5, and z=10:

++z + y - y + z + x++
(iii) Math.ceil(3.6)

✓ Question 2(a) 4/4

- (i)4.0 (ii)24 (iii)4.0
- (i)4.0 (ii)24 (iii)3.0
- (i)4.0 (ii)25 (iii)3.0
- (i)3.0 (ii)25 (iii)4.0 ✓

Question 2(b) Write the output of the given code snippet:

(i) String x= " is your name in this list"; (note: there is a space after the double quote)
int i=5;
int i1=x.indexOf('i');
System.out.println(x.substring(2,5)+ " " + i1);

(ii) public void main( ) {
int p[ ]={4,8,12,16,20,24};
int i,j,m;
i=++p[1];
j=p[2]++;
m=p[3];
System.out.println(i+j+m); }

✓ Question 2(b) * 4/4

- ( ) (i) yo 0 (ii) 34
- ( ) (i) s 2 (ii) 38
- (•) (i) s y 1 (ii) 37 ✓
- ( ) (i) yo0 (ii) 36

Question 2(c) Write the output:

(i) result= 5 > 12 ? 5 > 3 ? 5 : 3 : 12 > 3 ? 12 : 3;
(ii) String s1="computer";
String s2="car";
int n=s1.compareTo(s2);
System.out.println(n);

✓ Question 2(c) 4/4

- (i) 12 (ii) 14 ✓
- (i) 11 (ii) 15
- (i) 13 (ii) 13
- (i) 12 (ii) 16

✓ Question 2(d) Differentiate between == operator, equals( ) and compareTo( ) methods. * 4/4

== ~ It is a operator (relational operator).
~ It compares two primitive data and checks if they are equal or not.

equals() ~ It is a method/function (string function).
~ It compares two strings and checks whether they are identical or not.
~ It results in a Boolean type of value - true or false.

compareTo() ~ It is a function/method (string function).
~It compares and checks whether a string is equal, bigger or smaller than the other string.
~ It results in integer type of value.

Question 2(e)

In the program given below, state the name and the value of the:

(i) method argument or argument variable
(ii) class variable(s)
(iii) local variable(s)
(iv) instance variable(s)

```
class Myclass {
 Static int x=7;
 int y=2;
 public static void main(String args[ ] ) {
 Myclass obj=new Myclass( );
 System.out.println(x);
 obj.samplemethod(5);
 int a=6;
 System.out.println(a);  }
 void samplemethod(int n) {
 System.out.println(n);
 System.out.println(y);  }  }
```

✓ Question 2(e) * 4/4

(i) n, n = 5
(ii) x, x = 7
(iii) a, a = 6
(iv) y, y = 2

Question 2(f) Write java expression for :

(i) $X = ab\sqrt{4} + \sqrt[3]{b} + c$

(ii) $s=ut+\frac{1}{2}at^2$

✓ Question 2(f) * 4/4

(i) X = (a*b* (Math.sqrt(4))) + (Math.cbrt(b)) + c ;
(ii) s = (u*t) + ((1/2) * a * t * t);

PART B

Answer all questions. VDT should be written for all the programs.

✕ Question 3 Write a program to input a number and count the number of digits in the number using functions. 14/15

```
import java.util.*;
class countdig
{
Scanner sc = new Scanner(System.in);
System.out.println("Enter a number")
String num = sc.next();
int count = 0;
public void count()
{
int i =0 ;
for(i=0 ; i<num.length() ; i++)
{
if(num.charAt(i)!=' ' )
{
count++
}
System.out.println("The number of digits are = "+count)
}
public static void main(String args[])
{
  count();
}
}
```

VARIABLE DESCRIPTION TABLE

Variable's Name ----- Datatype ----- Description
count() ----- void ----- Function to find number of digits
i ----- int ---- loop variable
num ------ String ----- Stores the number

✓ Question 4 Write a program to accept a number and check if it is a palindrome or not. 15/15

```
import java.util.*;
class plaindrome_check
{
  public static void main (String args[])
  {
    Scanner sc = new Scanner (System.in);
    System.out.println("Enter a number");
    int x = sc.nextInt();
    int n = x;
    int d = 0;
    int r = 0;
   while(n>0)
   {
     d = n%10 ;
     r = r*10+d;
     n = n/10;
   }
if(x==r)
{
  System.out.println("The number entered is palindrome");
}
else
{
 System.out.println("The number entered is not palindrome");
}
}
}
```

VARIABLE DESCRIPTION TABLE

Variable's Name ----- Datatype ----- Description
x ----- int ----- Stores the user entered number
n ----- int ---- Stores the value of x to perform functions on it.
d ----- int ----- Divides variable n
r ----- int ----- Stores the reversed number

Question 5 Design a class to overload a function calc( ) as follows:

(i) void calc(int n, double x)- with one integer argument and one double argument to find the sum of the series

s= x/2+x/5+x/10+x/17… up to n terms

(ii) void calc( ) - to print the given pattern

5

5 7

5 7 9

5 7 9 11

✕ Question 5

11/15

```
import java.util.*;
class fn_ovrld
{
Scanner sc = new Scanner(System.in);
double sum = 0;
int i = 0;
public void calc(int n, double x)
{
double nr = x;
double dr;
double term;
int y = 3;
i = 2;
for(i=2;i<=n;i=i+y)
{
dr = i;
term = nr/dr;
sum=sum+term;
}
System.out.println("Sum of Series"+sum);
}
public void calc()
{
for(i=1;i<=4;i++)
{
x=5;
for(int j=1;j<=i;j++)
{
System.out.print(x+" ");
x+=2;
}
System.out.println();
}
}
public static void main(String args[])
{
  calc(10,3);
  calc();
}
}
```

✓ Question 6 Write a program to input an array of 10 phone numbers and the corresponding names and search and display the given name and phone number. 15/15

```
import java.util.*;
class SDA_telephone
{
  public static void main(String args[])
   {
      Scanner sc = new Scanner(System.in);
      System.out.println("Enter the phone numbers and names");
      int num[] = new int[10];
      String name[] = new String[10];
      int i = 0;
      for(i=0 ; i<10 ; i++)
      {
         num[i] = sc.nextInt();
         name[i] = sc.next();
      }
      System.out.println("Enter the name to find its phine number");
      String srch = sc.next();
      int k = 0;
      int x = 0;
      for(i=0 ; i<10 ; i++)
      {
         if(name[i]==srch)
         {
            k=1;
            x=i;
            break;
         }
      }
      if(k==1)
      {
         System.out.println("The phone number of "+srch+" is "+num[x]);
}
}
}
```

VARIABLE DESCRIPTION TABLE

Variable's Name ----- Datatype ----- Description
num[i] ----- int ----- SDA to store phone number
name[i] ----- String ---- SDA to store names
i ----- int ----- Loop Variable
k ----- int ----- Increments itself if it the name is present

x ------ int ----- Stores position of the name entered
srch ----- String ------ Stores the name to be searched