# C. U. SHAH UNIVERSITY
## Summer Examination-2022

**Subject Name : Object Oriented Programming with Java**

**Subject Code : 4TE04OPJ1**                    **Branch: B.Tech (CE)**

**Semester: 4**        **Date: 09/05/2022**        **Time: 11:00 To 02:00**        **Marks: 70**

Instructions:
  (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  (2) Instructions written on main answer book are strictly to be obeyed.
  (3) Draw neat diagrams and figures (if necessary) at right places.
  (4) Assume suitable data if needed.

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**Q-1**        **Attempt the following questions:**                    **(14)**

**a)**    Find the output of the following program.
```
public class Solution{
    public static void main(String[] args){
            short x = 10;
            x =  x * 5;
            System.out.print(x);
        }
}
```
        (i)  50
        (ii) 10
        (iii)Compile Error
        (iv)Exception

**b)**    When an array is passed to a method, what does the method receive?
        (i)  The reference of the array
        (ii) A copy of the array
        (iii) Length of the array
        (iv) Copy of first element

**c)**    Find the value of A[1] after execution of the following program.
```
int[] A = {0,2,4,1,3};
for(int i = 0; i < a.length; i++){
   a[i] = a[(a[i] + 3) % a.length];
}
```
        (i)  0
        (ii) 1
        (iii)2
        (iv)3

**d)**    In which of the following is toString() method defined?
        (i)  java.lang.Object
        (ii) java.lang.String
        (iii)java.lang.util
        (iv)None

**e)**    Identify the return type of a method that does not return any value.
        (i)  int

(ii) void
(iii) double
(iv) None

**f)** Identify the infinite loop.
   - (i) for(; ;)
   - (ii) for(int i = 0; i < 1; i--)
   - (iii) for(int i = 0; ;i++)
   - (iv) All of the above

**g)** Which of the following doesn't have a super class?
   - (i) System
   - (ii) Object
   - (iii) Lang
   - (iv) Exception

**h)** Why there is no destructor in Java?

**i)** What is data encapsulation? What is its significance?

**j)** How can you generate random numbers in Java?

**k)** Can main () method in Java returns any data? Justify.

**l)** Can we override static methods of a class? Justify.

**m)** Is String a data type in Java? Explain in brief.

**n)** How we can execute any code even before main method?

**Attempt any four questions from Q-2 to Q-8**

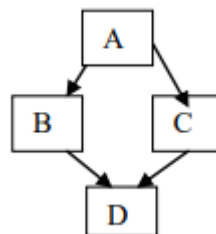**Q-2**     **Attempt all questions**
   **(a)** Write s Java program to take three numbers as command line argument and display the maximum among them.     **(05)**
   **(b)** What is constructor? Explain constructor overloading in detail with suitable example.     **(06)**
   **(c)** Explain use of this keyword in Java with suitable example.     **(03)**

**Q-3**     **Attempt all questions**
   **(a)** What is method overriding? Explain in detail with suitable example.     **(07)**
   **(b)** Enlist and explain the difference between error and exception. Write a program to handle InterruptedException, IllegalArgumentException using try-catch-finally and throw.     **(07)**

**Q-4**     **Attempt all questions**
   **(a)** List out all Java buzzwords and explain any three in detail.     **(07)**
   **(b)** Write a program to demonstrate the multipath inheritance for the classes having relations as shown in figure. A → (B,C) → D     **(07)**



**Q-5**     **Attempt all questions**
   **(a)** Write an application that executes two threads. One thread displays "Good Morning" every 1000 milliseconds & another thread displays "Good     **(07)**

Afternoon" every 3000 milliseconds. Create the threads by implementing the Runnable interface.

**(b)** What is package? List various built in package used in java. **(07)**

**Q-6** **Attempt all questions**

**(a)** Differentiate between final, finally and finalize. What will happen if we make class and method as final? **(07)**

**(b)** Write a Java program to create a frame with exit capabilities. Handle events for mouse pressed, mouse released, mouse clicked and mouse dragged by displaying appropriate message describing the event at the coordinates where the event has taken place. **(07)**

**Q-7** **Attempt all questions**

**(a)** Discuss public, private, protected and default access modifier with example. **(07)**

**(b)** Explain Delegation Event Model in details. **(07)**

**Q-8** **Attempt all questions**

**(a)** What is Applet? Draw and explain life cycle of an applet in detail. **(07)**

**(b)** What is Layout Manager? Explain different Layout Managers available in JAVA. **(07)**