**ABES Engineering College, Ghaziabad**

# B. Tech Even Semester Sessional Test-1

**Printed Pages: 2**

**Session: 2023-24**

**Semester: 4th**

**Course Code: BCS403 Roll No.:**

**Course Name: Object Oriented Programming with Java**  **Time:1.15Hrs. Maximum Marks: 30**

**Instructions:**

1. **Attempt All sections.**
2. **If require any missing data, then choose suitably.**

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| **Q. No.** | **Question** | **Marks** | **CO** | **KL** | **PI** |
| **Section-A Total Marks: 20** | | | | | |
| **1** | **Attempt ANY ONE part from the following** | ***Same K Levels Questions*** | | | |
| **a)** | Explain why Java is platform Independent. Explain the difference between JDK, JRE and JVM with a suitable diagram.  [**Company Specific]** | **2+3** | **CO1** | K2 | 1.4.1 |
| **b)** | Explain with the help of an example why String is immutable in Java. Difference between equals() method and equality operator (==) in Java? **[Company Specific]** | **2.5+2.5** | **CO1** | K2 | 1.4.1 |
| **2** | **Attempt ANY ONE part from the following** | ***Same K Levels Questions*** | | | |
| **a)** | Explain Jagged Array with a suitable program.  What is the output of the following program?  class simple  {  public static void main(String[ ] args)  {  simple obj = new simple();  obj.start();  }  void start()  {  long [] P = {3, 4, 5};  long [] Q = method (P);  System.out.print (P[0] + P[1] +P[2]+":");  System.out.print (Q[0] + Q[1] + Q[2]);  }  long [ ] method (long [ ] R)  {  R[1] = 7;  return R;  }  } **[UGC NET 2018]**. | **3+2** | **CO1** | K3 | 1.4.1 |
| **b)** | Explain the different uses of static and final keyword in java with example.  What is the output of the following program?  class Test1 {  public  static void main(String[] args)  {  int x = 20;  System.out.println(x);  }  static  {  int x = 10;  System.out.print(x + " ");  }  } | **3+2** | **CO1** | K3 | 1.4.1 |
| **3** | **Attempt ANY ONE part from the following** | ***Same K Levels Questions*** | | | |
| **a)** | Explain about different types of constructors in Java. Write a Java program to create a class called "Employee" with a name and Id attribute. Create two instances of the "Employee" class, set their attributes using the constructor, and print their name and Id using instance method. | **5+5** | **CO1** | K3 | 2.1.2 |
| **b)** | Write a Java program to create a super class called Figure that stores the dimension of a two-dimensional object. It also defines method called area() that computes the area of an object. The program derives two sub classes from Figure called Triangle and Rectangle. Each of these sub classes overrides area(), so that it returns the area of rectangle and triangle respectively. | **10** | **CO1** | K3 | 2.1.2 |
| **Section-B Total Marks : 10** | | | | | |
| **4** | **Attempt ANY ONE part from the following** | ***Same K Levels Questions*** | | | |
| **a)** | How Exception is handled in Java? Which keywords are used for Exception handling? | **2.5+2.5** | **CO2** | K2 | 1.4.1 |
| **b)** | Explain the difference between checked and unchecked exception. What are the major reasons why exception occurs in a program. | **2.5+2.5** | **CO2** | K2 | 1.4.1 |
| **5** | **Attempt ANY ONE part from the following** | ***Same K Levels Questions*** | | | |
| **a)** | Explain division by zero Exception with a suitable program. | **5** | **CO2** | K2 | 1.4.1 |
| **b)** | Explain the statement “finally block is always executed” with a suitable program. | **5** | **CO2** | K2 | 1.4.1 |

CO Course Outcomes mapped with respective question

KL Bloom's knowledge Level (K1, K2, K3, K4, K5, K6)

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5: Evaluate, K6-Create