Enrollment No: _____   Exam Seat No:_____

C. U. SHAH UNIVERSITY
Winter Examination-2019

Subject Name : Object Oriented Programming with Java
Subject Code : 4TE04OPJ1   **Branch: B.Tech (CE)**
Semester : 4   **Date : 21/09/2019**   **Time : 02:30 To 05:30**   **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.

Q-1   **Attempt the following questions:**   **(14)**
  a) What is checked exception?
  b) Give benefits of using generic types.
  c) What is an applet in Java?
  d) Define polymorphism.
  e) What is garbage collection in Java?
  f) How Java differs from C++?
  g) What are bytecodes?
  h) What is the use of static keyword?
  i) What is inheritance?
  j) JVM is platform independent. Justify.
  k) What is an object?
  l) What is the use of **new** operator in Java?
  m) Name the eight wrapper classes in Java.
  n) What is the first method executed in an application?

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

Q-2   **Attempt all questions**   **(14)**
  (a) Explain java buzzwords in detail.
  (b) What are three uses of super keyword in Java? Explain with suitable example.

Q-3   **Attempt all questions**   **(14)**
  (a) Explain dynamic method dispatch with suitable example.
  (b) Why synchronization is required in multithreaded programming? Write a program that uses thread synchronization to guarantee data integrity in a multithreaded application.

Q-4   **Attempt all questions**   **(14)**
  (a) Differentiate between constructor and method of class. Define method overloading and its purpose. Write a program to demonstrate the constructor overloading.
  (b) What are the four methods that are called by an applet viewer or browser

during the lifetime of an applet? When are they invoked?

Q-5   **Attempt all questions**   **(14)**
- **(a)** Explain exception handling in java with suitable example. Also give difference between throw and throws in Java. List out some build-in exceptions in Java.
- **(b)** Explain final class, final method and final variable with suitable examples.

Q-6   **Attempt all questions**   **(14)**
- **(a)** Explain interface in JAVA. How do interfaces support polymorphism?
- **(b)** What is method overriding in Java? Explain with suitable example.

Q-7   **Attempt all questions**   **(14)**
- **(a)** What are the three responsibilities of event sources and what are the three responsibilities of event listener in the Delegation Event Model?
- **(b)** List and explain different types of layout. Write a program that implements Border Layout, Flow Layout and Grid Layout using panel.

Q-8   **Attempt all questions**   **(14)**
- **(a)** What is package? How to create package in Java? Explain with suitable example.
- **(b)** Explain in detail use of adapter class. Also explain inner class and anonymous inner class with suitable example.