C.U.SHAH UNIVERSITY Summer Examination-2019

Subject Name : Object Oriented Programming with Java

Subject Code : 4TE04OPJ1		Branch: B.Tech (CE)	
Semester: 4	Date: 01/05/2019	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:

- **a**) Name five packages in the Java class libraries and briefly describe their function.
- **b**) What does a throws clause in a method declaration indicates?
- c) What are bytecodes?
- **d**) What is the difference between applications and applets?
- e) When is object garbage collected?
- f) Name the eight wrapper classes.
- g) Describe uses of **this** keyword.
- **h**) Why must super() or this() be the first statement in a constructor?
- i) Can a class declaration include both the **abstract** and **final** modifiers? Justify.
- **j**) What are the two subclasses of **Throwable**? Explain the distinction between these.
- **k**) Name possible states through which a thread moves during its life cycle.
- **I)** What exception thrown by parseInt() method?
 - i. ArithmeticException
 - ii. ClassNotFoundException
 - iii. NullPointerException
 - iv. NumberFormatException
- m) Which provides runtime environment for java byte code to be executed?
 i. JDK
 ii. JVM
 iii. JRE
 iv. JAVAC
- **n**) Which of these is supported by method overriding in Java?
 - i. Abstraction ii. Encapsulation
 - iii. Polymorphism

iv. None of the mentioned

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

Q-2 Attempt all questions

- (a) Write an application in Java that accepts two doubles as its command-line arguments, multiplies these together and displays the product.
- (b) Explain final class, final method and final variable in Java with suitable



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(14)

example.

Q-3 Attempt all questions

- (a) The abstract **Monster** class has three concrete subclasses named **Vampire**, **Werewolf**, and **Zombie**. Create six different monsters of various types, and store them in a one-dimensional array. Write a Java program that displays the type of each monster.
- (b) What is constructor in Java? Explain constructor overloading with suitable example. Also explain copy constructor to copy one object into another with an example.

Q-4 Attempt all questions

- (a) Explain Java buzzwords in detail.
- (b) The abstract class **Animal** has abstract subclasses named **Bird** and **Reptile**. Classes **Dove**, **Eagle**, **Penguin** and **Seagull** extend **Bird**. Classes **Rattlesnake** and **Turtle** extend **Reptile**. The **ColdBlooded** interface defines no constants and declares no methods. It is implemented by **Reptile**. The **OceanDwelling** interface also defines no constants and declares no methods. It is implemented by the **Penguin**, **Seagull** and **Turtle** classes. Define all of these classes and implement the interfaces as specified. Create one instance of each class and display all cold-blooded animals and all ocean-dwelling animals.

Q-5 Attempt all questions

- (a) What is thread? Explain two ways to create a thread with suitable examples.
- (b) Write a program that generates a custom exception if any of its command-line arguments are negative.

Q-6 Attempt all questions

- (a) What are the four methods that are called by an applet viewer or browser during the lifetime of an applet? When are they invoked?
- (b) What are the three responsibilities of event sources and what are the three responsibilities of event listener in the Delegation Event Model?

Q-7 Attempt all questions

- (a) List and explain different types of layout. Write a program that implements Border Layout, Flow Layout and Grid Layout using panel.
- (b) Explain in detail use of adapter class. Also explain inner class and anonymous inner class with suitable example.

Q-8 Attempt all questions

- (a) Why synchronization is required in multithreaded programming? Write a program that uses thread synchronization to guarantee data integrity in a multithreaded application.
- (b) Create an applet that draws Circle, Rectangle and Ellipse with filling effects. (04)
- (c) What are the benefits of using generic types? (03)



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