

# C. U. SHAH UNIVERSITY

## Summer Examination-2016

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

**Subject Code : 4TE04OPJ1**

**Branch : B.Tech (CE,IT)**

**Semester : 4**

**Date : 20/05/2016**

**Time : 2:30 To 5:30**

**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.
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- Q-1 Attempt the following questions: (14)
- a) Which of the following is true about Java?  
[A] Java does not support overloading [B] There are no header files in Java  
[C] Java has replaced the destructor function of C++ [D] All of the above
- b) All java classes are derived from  
[A] java.lang.Class [B] java.util.Name [C] java.lang.Object [D] java.awt.Window
- c) The default package that is implicitly called in a java program is  
[A] java.lang [B] java.util [C] java.awt [D] java.system
- d) Which of the following is not mandatory in variable declaration?  
[A] a semicolon [B] an identifier [C] an assignment [D] a data type
- e) The out object is an object encapsulated inside the \_\_\_\_ class, and represents the standard output device.  
[A] standard [B] local [C] global [D] system
- f) break statement is used to  
1) get out of method, 2) end a program, 3) get out of a loop, 4) get out of the system  
[A] 1 & 2 [B] 1,2 & 3 [C] 1 & 3 [D] 3
- g) Is it possible in Java to create arrays of length zero?  
[A] Yes, you can create arrays of any type with length zero.  
[B] No, it is not possible to create arrays of length zero in Java.
- h) In the given Array declaration, which expression returns the output as 5?  
int [] arr = {23, 15, 78, 34, 2};  
[A] arr.length() [B] arr[].length() [C] arr[0].length [D] arr.length
- i) When a program class implements an interface, it must provide behavior for  
[A] two methods defined in that interface

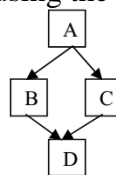


- [B] any methods in a class  
 [C] only certain methods in that interface  
 [D] all methods defined in that interface
- j) Which of the following statements about abstract methods/classes in Java is true?  
 [A] An abstract class cannot be instantiated  
 [B] Constructors can be abstract  
 [C] A subclass of an abstract class must define the abstract methods  
 [D] Static methods may be declared abstract
- k) The order of the three top level elements of the java source file are  
 [A] Import, Package, Class [B] Class, Import, Package  
 [C] Package, Import, Class [D] Random
- l) Which method is called first by an applet?  
 [A] start() [B] run() [C] init() [D] paint()
- m) The Applet class is in .....package  
 [A] java.applet [B] java.awt [C] java.io [D] java.util
- n) Inner classes are  
 [A] anonymous classes [B] nested classes [C] sub classes [D] derived classes

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

- Q-2 Attempt all questions:
- (a) Define the following terms: (05)  
 i) Variable, ii) Operator, iii) Keyword, iv) Method, v) JDK
- (b) The abstract Vegetable class has three subclasses named Potato, Brinjal and Tomato. (05)  
 Write a java application that demonstrates how to establish this class hierarchy. Declare one instance variable of type String that indicates the color of a vegetable. Create and display instances of these objects. Override the toString() method of Object to return a string with the name of the vegetable and its color.
- (c) Define 'super' keyword. Write a java application that shows use of it. (variable, (04)  
 constructor, method)

- Q-3 Attempt all questions:
- (a) Define the following terms: (05)  
 i) Class ii) Object, iii) Constructor, iv) Method Overloading, v) Method Overriding
- (b) Write a java application for following using the concept of inheritance: (05)



- (c) Define 'final' keyword. Write a java application that shows use of it. (variable, method, (04)  
 class)



- Q-4 Attempt all questions:
- (a) Define the following terms: (05)  
i) instanceof, ii) Package, iii) this, iv) Thread, v) throw
  - (b) Write a java application to create two threads, one thread will print odd numbers and second thread will print even numbers between 1 and 10 numbers. (05)
  - (c) Define 'Dynamic Method Dispatch'. Write a java application that shows use of it. (04)
- Q-5 Attempt all questions:
- (a) What is Exception? Write a java application to create custom exception using concept of throw and throws keyword. (06)
  - (b) Declare a class called coordinate to represent 2 dimensional Cartesian coordinates(x, y). Define following methods: (06)  
i) constructor, ii) display, to print values of members, iii) add\_coordinates, to add two such coordinate objects to produce a resultant coordinate object, iv) main, to show use of above methods.
  - (c) Write a java application that shows use of Character Class. (02)
- Q-6 Attempt all questions:
- (a) Explain life cycle of Applet. Write a java applet that shows the life cycle methods of applet. (06)
  - (b) Write a java applet that has three Buttons labeled Red, Green, Blue and on clicking, the background color should change accordingly & have a label displaying the color selected. (06)
  - (c) Write a java application that shows use of StringBuffer Class. (02)
- Q-7 Attempt all questions:
- (a) What is Layout? Explain Flow Layout and Grid Layout managers with example. (06)
  - (b) Write a java applet that shows mouse related events using concept of adapter class. (06)
  - (c) Write a java application that shows use of Random Class. (02)
- Q-8 Attempt all questions:
- (a) Write a java application to create simple calculator in a frame which supports addition and subtraction operations. There are buttons for 0 to 9 digits and for arithmetic operations. Select layout of your choice. (07)
  - (b) Write a java application to create a stack in a frame which stores integer numbers. (07)  
There are two buttons called PUSH & POP and a text field. Clicking of button PUSH pushes the number entered in the text field onto the stack. The click of button POP pops an element from the stack and displays that in the text field.

