

P P SAVANI UNIVERSITY

Third Semester of B. Tech. Examination

December 2018

SEIT2010 Object Oriented Programming with Java

Time: 09:00 a.m. To 11:30 a.m.

Maximum Marks: 60

21.12.2018, Friday

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

Q - 1 Answer the following questions: (Any Five)

[05]

- (i) What is an abstraction in Java?
- (ii) Can we create our own package?
- (iii) What is immutable?
- (iv) Write use of final keyword.
- (v) What is the static variable?
- (vi) What is an object?
- (vii) What is constructor in Java?

Q - 2 (a) Explain concepts of object oriented programming.

[05]

Q - 2 (b) Explain JDK, JRE and JVM in detail.

[05]

OR

Q - 2 (a) Give differences between abstract class and interface with suitable examples.

[05]

Q - 2 (b) Explain method overloading and method overriding with example.

[05]

Q - 3 (a) Design a class named Person and its two subclasses named Student and Employee. Make Faculty and Staff subclasses of Employee. A person has a name, address, phone no. and email id. A student has class status (1st year, 2nd year or 3rd year). An employee has an office, salary, date-hired. Define a class names MyDate that contains fields year, month and day. It has a constructor which throws an exception if the values of year, month and day are not in proper range. A faculty member has office hours and rank. A staff member has a title. Override the toString() method of the Object class to display the class name and person's name.

[05]

Q - 3 (b) Explain abstract method with an example.

[05]

OR

Q - 3 (a) Explain super and this keyword with proper examples.

[05]

Q - 3 (b) Create a class overload Demo and also create method test () in it. Overload test () in four ways. First version takes no parameter, the second takes one integer parameter, and the third takes two integer parameters and fourth takes one double parameter.

[05]

Q - 4 Answer the following questions:

[05]

- (i) What is constructor in java? Give an example.
- (ii) Explain inner class with proper example.

SECTION - II

Q - 1

Answer following questions: (Any Five)

- (i) What is the order of method invocation in an Applet? [05]
- (ii) How many types of exception can occur in a Java program?
- (iii) How many ways to create the String object?
- (iv) What is the purpose of String class in Java?
- (v) What is the use of catch block?
- (vi) What is serialization?
- (vii) Can you write a Java class that could be used both as an applet as well as an application?

Q - 2 (a)

What is an Exception? Explain Exception handling in JAVA. [05]

Q - 2 (b)

Explain an array, types of array and give suitable example. [05]

OR

Q - 2 (a)

What is multithreading in Java? [05]

Q - 2 (b)

Write a program for exception handling for the following: [05]

Take student id from command line argument. The student id must be of six characters only, where first two characters indicate year of entering the college, next two specifies the disciplines and last two gives the serial number.

If the year of entry is exceeding the current year then program throws custom exception:

NotValidYearException, If the discipline is not either CP or IT, it throws

NotValidDisciplineException, If the serial number is not between 00 to 99 it throws

ArithmeticException.

Q - 3 (a)

Explain methods of Applet with suitable examples. [05]

Q - 3 (b)

Write a java program to count the total number of occurrences of a given character in a string. [05]

OR

Q - 3 (a)

Explain File handling in Java. [05]

Q - 3 (b)

Create screen to take input from user for filling up signup form. [05]

Q - 4

Answer following questions: [05]

(i)

Give the differences between String class and StringBuffer class.

(ii)

Explain various character extraction methods of String class with example.
