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III B.Tech I Semester Examinations, May 2011 OBJECT ORIENTED PROGRAMMING Instrumentation And Control Engineering

Time: 3 hours

Code No: 07A52203

Max Marks: 80

Answer any FIVE Questions All Questions carry equal marks * * * * *

- 1. (a) Explain briefly about basics of networking
 - (b) Explain in detail about the connection less client-server interaction with neat diagram. [8+8]
- 2. (a) How applet differ from application program?
 - (b) Write an applet to display the current date and time? [8+8]
- 3. (a) Explain about Super class, Sub class, Abstract class and final class.
 - (b) Explain the significance of public, protected and private access specifiers in inheritance? Illustrate with examples. [8+8]
- 4. (a) Develop a simple program to Illustrate the use of multithreading
 - (b) What are the differences between multiprocessing and multithreading?
 - (c) Describe getName and getPriority. [8+4+4]
- 5. (a) What is meant by inheritance in the OOP paradigm? How it helps to make the class reusable? Explain.
 - (b) What is the difference between base class and derived class. Explain.
 - (c) What is the significance of visibility levels. [6+6+4]
- 6. (a) Write about layout managers.
 - (b) Write a program which takes width and length as input and draws a filled rectangle. [8+8]
- 7. (a) How do you declare and create an array? What happens when your program attempts to access an array element with an invalid index.
 - (b) Is an array an object or primitive data type value? Justify your explanation with suitable illustrations.
 - (c) Write a Java program that implements binary search using arrays. [4+6+6]
- 8. (a) Write a runtime polymorphism program in Java using interface reference variable.
 - (b) Write the same program using object reference variable. [8+8]

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- 1. (a) Write a program to pause and restart the execution of a thread.
 - (b) Explain in detail any three checked exceptions.
- 2. Explain the following:
 - (a) Methods overriding.
 - (b) Super class and sub class.
 - (c) Static and dynamic binding.
 - (d) Abstract classes.
- 3. (a) Write a Java program to illustrate the usage of the reverse() method of the String Buffer class. Give the output.
 - (b) Explain the delete() and deletecharAt() methods of the StringBuffer class with the help of syntax and examples. [8+8]
- 4. (a) Explain about Factory methods.
 - (b) Write a program to prints the addresses and names of the local machine and two well-known Internet web sites. [8+8]
- 5. (a) Define package.
 - (b) List the benefits of packages.
 - (c) Write about Java System packages.
 - (d) Explain the import statement with an example. [2+3+6+5]
- 6. Write a java program to illustrate menus.
- 7. Explain the functionality of JComponent with example. Differentiate between JComponent and JPanel? [16]
- 8. (a) How does an object oriented approach differ from structured approach for a software development? Explain with an example.
 - (b) What is containership? How does it differ from inheritance?
 - (c) List any five applications of OOP technology. [8+4+4]

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 $[4 \times 4 = 16]$

[8+8]

[16]

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- 1. Write short notes on the following.
 - (a) Data abstraction
 - (b) Data binding
 - (c) Garbage collection.
- 2. (a) How do we pass the arguments to the constructor of a base class? Explain with example.
 - (b) Explain with example when do we declare a method or class abstract?
 - (c) Write a java program to illustrate the impact of final keyword? [5+5+6]
- 3. (a) Explain the networking class
 - (b) What are the uses of InetAddress class
 - (c) Distinguish between sockets and server sockets. [5+5+6]
- 4. Write an application that allows the user to draw different shapes. The user should be allowed to choose from an oval, an arc, a line and a rectangle with rounded corners. Also display the mouse coordinates in the status bar. [16]
- 5. (a) Write a Java program to design a package to contain the class Student which gives details about a student name, rollno, class and six subject Marks and import this package in your Program and calculate n number of Students average marks.
 - (b) Write about Java.io package.

[8+8]

[16]

6. Write a java program to display the following 3 by 3 magic square [total=15] using Jtable? [16]

2	9	4
7	5	3
6	1	8

7. (a) Design a class to represent a bank account include the following members: Data members; Name of the depositor Account number Type of account Balance amount in the account

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Set No. 1

Methods; To assign initial values To deposite an amount To with draw an amount To display the name and balance

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- (b) Define a class matrix to represent matrix of order mxn. Use OOP concept to verload matrix operations. Using it compute R=A+B-C*D where R, A, B, C, D represent square matrix of order n.
- 8. (a) What is the difference between suspending and stopping a thread? How do we use set priorities in threads?
 - (b) Write a program that creates a thread that forces preemptive scheduling for lower-priority threads. [8+8]

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1. (a) Write the following algebraic expressions in Java:

i.
$$(a^2 + b^2 - 2abcos (x))^{1/2}$$

... $2m_1m_2$

ii.
$$---- * g$$

 $m_1 + m_2$

- (b) Write a Java program to reverse a given integer.
- (c) Explain with example the use of break and continue statements in a "for" loop? [4+6+6]
- 2. (a) What is an interface and how it differs from an abstract class?
 - (b) Distinguish between extends and implements. [8+8]
- 3. Write a java program to design a dialog box as shown in figure ?? [16]

Password dialogue box				
User ID				
Password				
	ok	cancel		

Figure 1:

- 4. (a) Write a program to illustrate the methods set priority() and isAlive() methods
 - (b) What are the thread priorities available in thread class? Explain with example. [8+8]
- 5. (a) Describe how to prepare a server to receive a stream-based connection request from a single client.

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- (b) What determine how many connection requests from clients can wait in a queue to connection to a server. [8+8]
- 6. (a) Contrast: Object-based Vs Object-oriented. Give an example (Other than Java and C⁺⁺) of each category of languages.
 - (b) Explain the following:
 - i. Class and object.
 - ii. Messages.

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- iii. Methods.
- iv. Instances.

[6+10]

- 7. Write a program that uses System.out.println statements to print out events as they occur, provide a JComboBox with maximum of four items. The user should be able to choose an event to monitor from the JComboBox. When that particular event occurs, display information about the event in a message dialog box .Use method to string on the event object to convert it to a string representation? [16]
- 8. Add a new method in the base class of Shapes.java that prints a message, but don't override it in the derived classes. Explain what happens. Now override it in one of the derived classes but not the others, and Explain what happens. Finally, override it in all the derived classes. Explain in detail about each situation. [16]

