(ii) Design a class using Java to represent a student record having the following attributes and methods :

(i) Attributes are as follows : Enroll_no, Name, Father_name, Branch, Year_of_admission, Student_semester, Student_address, Student_status.

(ii) The methods are as follows : to assign the initial values to all attributes, to admit a new student, display the list of students admitted in a given year.

(c) Write short notes on the following :

(i) Enterprise Java Beans

(ii) Abstract methods and classes.

5. Answer any **two** parts :   (10×2=20)

(a) What do you understand by ODBC ? Why is it required ? How is it implemented using Java ? Explain with an example.

(b) (i) Define Applet. Also discuss Applet life cycle using a diagram and explain its various states.

(ii) Write a short note on the utility of Java as Internet programming language.

(c) Write short notes on the following with suitable examples :
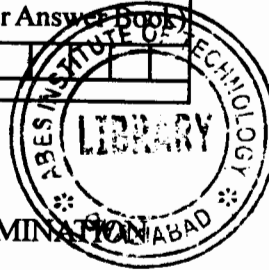
(i) Java Servlets

(ii) Exception handling techniques.

B.Tech.

(SEM. V) ODD SEMESTER THEORY EXAMINATION
2010-11

OBJECT ORIENTED TECHNIQUES

Time : 3 Hours   *Total Marks : 100*

Note : Attempt all questions.

1. Answer any **two** parts :   (10×2=20)

(a) (i) What do you mean by encapsulation ? How does the object-oriented concept of message passing help to encapsulate the implementation of an object, including its data ?

(ii) What do you mean by polymorphism ? Is this concept only applicable to object oriented systems ? Explain.

(b) (i) What do you mean by activity diagram ? What are the two special states shown in an activity diagram ? Explain with an example.

(ii) Define an abstract class. When is it required to create an abstract class ? Explain it with an example.

(c) (i) Define object oriented modeling (OOM). Describe various steps involved in OOM process. Explain.

(ii) What do you mean by multiple inheritances ? Explain it with an example. Can you implement multiple inheritances in Java ?

2. Answer any **two** parts : (10×2=20)

(a) Design an AUTOMOBILE base class in Java. Define its all methods and data structures. Through inheritance mechanism, create one class namely CAR. Implement its data structures and important methods. Observe the following while designing the classes :

(i) Clearly indicate the private and public classes.

(ii) Design constructors in each class and explain its purpose.

(iii) Identify data structures and methods which can be inherited (Make suitable assumption where required).

(b) What do you mean by a collaboration diagram ? Explain various terms and symbols used in a collaboration diagram. How polymorphism is described using a collaboration diagram ? Explain using an example.

(c) (i) What do you understand by architectural modeling ? Explain its various concepts and diagrams with suitable example.

(ii) Write a short note on use case diagram and time diagram with suitable diagram and their utility in system design.

3. Answer any **two** parts : (10×2=20)

(a) Describe the following with example :

(i) Steps of object oriented design

(ii) Generalization and specialization

(iii) Modeling association as a class

(iv) Physical packaging.

(b) (i) How do you map the object oriented concepts using non-object oriented languages ? Explain with an example.

(ii) Describe the various features of object oriented languages. Also compare any two object oriented languages.

(c) Write short notes on the following :

(i) Reusability and robustness

(ii) Translating object oriented design into an implementation.

4. Answer any **two** parts : (10×2=20)

(a) (i) Describe the main features of Java. Also discuss the features that make Java different from C++.

(ii) What do you mean by multithreading ? Does it have an impact on the performance of Java ? Explain.

(b) (i) Write a program in Java to calculate the sum of the digits of a given positive integer number. For example, if the given number is 12345 then the program should display: 15.