(b) (i) Write a program in Java to count display the frequency of vowels in a given sentence of at least 35 characters long.

(ii) Design a class using Java to represent a student record having the following attributes and methods: (i) Attributes of the student Institute are as follows : Student_ID, Student_Name, Student_Address, Birth_Date, Course, Enrollment_Year; (ii) The methods are as follows: to assign the initial values to all attributes, to add a new student record, display the list of students for a given year of enrollment and course.

(c) Write short notes on the following giving their significance and with suitable example using Java in brief :

(i) Enterprise Java Beans

(ii) Java API's.

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

(a) (i) What do you mean by Applets ? How Applets differ from the applications ? Explain with an example using Java.

(ii) Write a short note on Java Swing with suitable example.

(b) Write short notes on the following with an example using Java : (i) JAR files (ii) Packages (iii) Multithreading (iv) Interface.

(c) What do you mean by JDBC ? What is its significance ? How database connectivity is done using Java ? Discuss it with suitable example.

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2166 Roll No. | | | | | | | | | | |

B. Tech.

(SEM.V) THEORY EXAMINATION 2011-12

OBJECT ORIENTED TECHNIQUES

Time : 3 Hours *Total Marks : 100*

Note :- (1) Attempt **all** questions.

(2) Make suitable assumption if required.

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

(a) (i) What do you understand by object oriented technology ? Discuss the pros and cons of object oriented technology with suitable example.

(ii) Differentiate between a class and object with some example. Also prepare a list of objects that you would expect each of the following systems to handle : (1) a program for laying out a newspaper, (2) a catalog store order entry system.

(b) (i) What do you mean by modeling ? Discuss several purposes served by models with suitable examples.

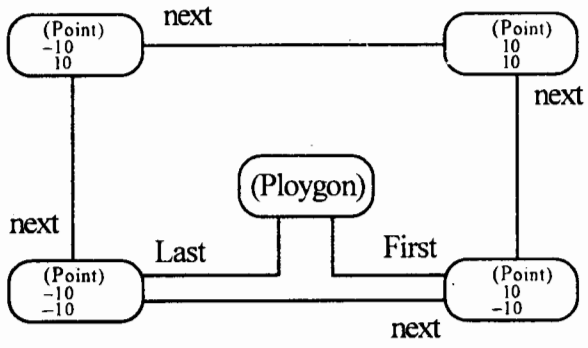
(ii) What do you mean by generalization ? Explain. How is it related with inheritance ?

(c) (i) What do you mean by UML ? Discuss the conceptual model of UML with the help of an appropriate example.

(ii) Wire is used in the following applications. For each of the following applications, prepare a list of wire characteristics that are relevant and also explain why each characteristic is important for the application : (1) Designing the filament for a light bulb; (2) Designing the electrical system for an airplane.

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

(a) (i) Give the general layout of a class diagram. Also prepare a class diagram for the instance diagram shown in the Figure 1. Explain your multiplicity decisions. How does your diagram express the fact that points are in sequence ?



Figure–1

(ii) What is a collaboration diagram ? How polymorphism is represented in a collaboration diagram ? Explain with an example.

(b) What do you mean by sequence diagram ? Explain various terms and symbols used in a sequence diagram. Describe the following using sequence diagram : (i) asynchronous messages with/without priority. (ii) broadcast messages.

(c) (i) Discuss in brief the following terms : (1) Component diagrams. (2) Basic behavioural modeling.

(ii) Prepare a portion of an object diagram for a library book checkout system that shows the date a book is due and the late charges for an overdue book as derived objects.

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

(a) Explain each of the following with in reference to object oriented programming style with an example :

(i) Reusability (ii) Robustness

(iii) Extensibility (iv) Abstraction.

(b) (i) How objects oriented concept can be implemented using non-object oriented language ? Explain with an example.

(ii) What do you mean by documentation ? What are the various considerations in documentation designing ? Explain.

(c) Write short notes on the following :

(i) Jackson Structured Development (JSD).

(ii) Dynamic modeling and Functional modeling.

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

(a) (i) Why Java is known as a platform independent language ? Discuss the advantages and disadvantages of a platform independent language. Also give various data types in Java.

(ii) How polymorphism is handled in Java ? Explain with some suitable example using Java programming language.