(Following paper id and roll no. is to be filled in answer book)
Paper Id; 214419 Roll No.

MCA
(SEM IV) CARRY OVER EXAM. 2014-15
OBJECT ORIENTED SYSTEMS

Time : 3 Hours *Total Marks : 100*

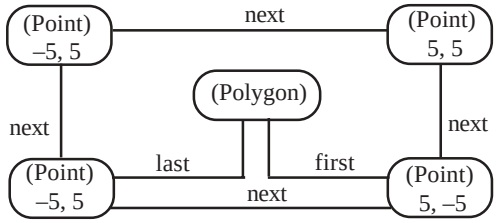
Note :– Attempt **all** questions.

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

(a) (i) What do you mean by modeling ? What are the advantages and disadvantages of modeling ? Discuss.

(ii) Explain the concept of class, method and object with suitable example.

(b) (i) Give the structure for a class diagram. Also prepare a class diagram for the following object diagram :



(ii) Differentiate between the concept of generalization and aggregation with a suitable example.

(c) Discuss the following with suitable example : (i) Abstraction (ii) Association (iii) Candidate keys (iv) Synergy.

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

(a) Define state. A simple digital watch has a display and two buttons to set it, the A button and the B button. The watch has two modes of operations, display time and set time. In the display time mode, hours and minutes are displayed, separated by a flashing colon. The set time mode has two sub-modes, the set hours and set minutes. The A button is used to select modes. Each time it is pressed the mode advances in the sequence : display, set hours, set minutes, display etc. Within the sub-modes the B button is used to advance the hours or minutes once each time it is pressed. Buttons must be released before they can generate another event. Prepare state diagram of the watch.

(b) (i) What do you mean by an event ? How event classes and attributes are shown ? Also explain event trace with suitable example.

(ii) Define scenario. Explain a scenario with suitable example using a diagram.

(c) Write short notes on the following with suitable example :
(i) State generalization and Event generalization
(ii) Advanced dynamic modeling concepts.

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

(a) What is data flow diagram ? Discuss various symbols used to make DFD. Discuss the various steps to construct functional model for ATM (Automatic Teller Machine). Also make a data flow diagram for transaction processing. Make suitable assumptions.

(b) Discuss the various features of SA/SD methodology and compare it with OMT.

(c) Write short notes on the following : with object oriented point of view with suitable example :

(i) Extensibility

(ii) Programming in the large.

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

(a) (i) What do you understand by multithread programming ? Discuss its significance using an example in Java.

(ii) Write a short note on various operators in Java. Also discuss operator precedence with suitable example in Java.

(b) Define applet. Develop an applet that receives the three positive integer values from the user and then displays the minimum out of these three positive integers on the screen.

(c) (i) Write a program in Java to count the number of words in a given sentence using string handling functions.

(ii) Write a short note on Layout Manager.

5. Write short notes on any **two** parts : **(10×2=20)**

(a) Java Swing.

(b) Migration from C++ to Java

(c) Scrabblets and Lavatron applets.