

Printed Pages—3

MCA412

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

PAPER ID : 1449

Roll No.

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M.C.A.

(SEM. IV) THEORY EXAMINATION 2010-11

OBJECT ORIENTED SYSTEMS

Time : 3 Hours

Total Marks : 100

Note :—Attempt ALL questions.

1. Answer any two parts of the following :— (10×2=20)

(a) (i) What is object-oriented development ? Comment on the statement “Object oriented development is a conceptual process independent of a programming language until the final stages”.

(ii) Explain the concept of Object and Class with suitable example.

(b) (i) What do you mean by abstraction ? How abstraction is useful to object oriented development ?

(ii) Differentiate between the concept of link and association with a suitable example.

(c) Describe the following with suitable example and their significance to object oriented modeling using diagrams :

(i) Aggregation

(ii) Abstract Class.

2. Answer any two parts of the following :— (10×2=20)

(a) What is the purpose of event trace diagrams ? Explain. Describe the event trace for ATM (Automated Teller Machine) scenario. Also draw event flow diagram for ATM.

- (b) (i) What do you mean by dynamic modeling ? What is the significance of dynamic modeling in object oriented development ? Explain.
- (ii) What do you understand by state ? How is it modeled ? Explain with some suitable example.
- (c) Write short notes on the following with suitable example and a diagram :
 - (i) Nested State Diagram
 - (ii) Aggregation Concurrency.

3. Answer any two parts of the following : (10×2=20)

- (a) There is a clear distinction between definition and the implementation of a function. The definition describes the behavior of the function while the implementation actually computes the function. The definition of a function may be used to test the accuracy of the implementation. Prepare definitions of each of the following functions using mathematics, diagrams, or pre and post-conditions :
 - (i) Absolute value
 - (ii) Trigonometric sine
 - (iii) Natural logarithm
 - (iv) Square root.
- (b) Write short notes on the following with an example and using a diagram :
 - (i) Actions for telephone switcher connection.
 - (ii) Specifying operations.

- (c) (i) Discuss the relation of functional model to object model and dynamic model.

- (ii) Write a short note on SA/SD methodology.

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

- (a) (i) Why Java is known as a platform independent language ? Discuss.

- (ii) How classes and methods are implemented using Java ? Describe with suitable example.

- (b) (i) Write a short note on AWT. Also illustrate with some example.

- (ii) How event handling is done in Java ? Explain with an example.

- (c) (i) How you will draw the following figures using Java : A rectangle, and drawing any arc ?

- (ii) Write a program in Java to number of vowels in a given word.

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

- (a) (i) What are Java Servlets ? Discuss with some example.

- (ii) What are the steps to migrate from C++ to Java ? Explain with some example.

- (b) Write the short notes on the following with suitable example using Java :

- (i) Scrabblets.

- (ii) Image based menu.

- (c) What is JDBC ? What is its role in application development ? Describe JDBC in detail with suitable example.