

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

PAPER ID : 1449

Roll No.

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MCA

(SEMESTER-III) THEORY EXAMINATION, 2012-13 (Regular / Re-admitted)

OBJECT ORIENTED SYSTEMS

Time : 3 Hours]

[Total Marks : 100

Section – A

1. Attempt **all** question parts :

10 × 2 = 20

- What is object oriented programming ?
- What is a copy constructor ? When is it called ?
- What are the constraints of data flow diagram ?
- Discuss OMT methodologies.
- Define the terminology used in UML technique.
- Describe structured analysis and structured design in brief.
- What is inline function ? How does it work ?
- What is the need for a Virtual Destructor ?
- Write the syntax of exception that has occurred. How that exception should be handled ?
- What do you mean by virtual class ? When do we declare a class as virtual in C++ ?

Section – B

2. Attempt any **three** question parts :

10 × 3 = 30

- When should we use inline function and friend function ? Explain each with an example.

- (b) Define Inheritance. What are the different types of inheritance ? Explain each type with suitable example(s).
- (c) Concatenate two strings using operator overloading using C++ codes.
- (d) What represents the word “exception” ? How are they handled in C++ ? Explain each block with proper example.
- (e) Compare & contrast between OMT with SA/SD, JSD.

Section – C

Attempt **all** questions : **10 × 5 = 50**

3. Attempt any **two** parts : **5 × 2 = 10**

- (a) What is function overriding ? Explain with an example.
- (b) Write a program where numbers are stored in an array in a program. Create two files even and odd using command line argument, where odd file stores all odd numbers in the array and even file stores all even numbers in the array.
- (c) (i) Describe Link and Association with suitable sketch in detail.
(ii) Explain Generalization & Aggregation with suitable example and sketch.

4. Attempt any **two** parts : **5 × 2 = 10**

- (a) What is state diagram ? Differentiate between a simple state diagram and nested state diagram with proper example.
- (b) What are the use case diagrams, explain by suitable example in detail.
- (c) Explain in detail Aggression with suitable example.

5. Attempt any **two** parts : **5 × 2 = 10**

- (a) Describe the various features of object oriented concepts.
- (b) Write a program in C++ to read from the file “example.txt” and write into the file “system.txt”. Kindly use the function to open() and close().
- (c) Design & implement the Object Oriented Model by using UML.

6. Attempt any **one** part :

$10 \times 1 = 10$

- (a) Explain how run-time polymorphism is achieved in C++ giving a suitable code.
- (b) What are the advantages of dynamic memory allocation ? Discuss its supporting operators "new" & "delete" in C++. Are there any methods in C++ to check if the allocation was successful ? Explain.

7. Attempt any **one** part :

$10 \times 1 = 10$

- (a) Discuss with an example the three different techniques of OMT model.
- (b) Write short notes on the following :
 - (i) Sequence Containers
 - (ii) Storing User-Defined Object