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MCA (Sem. - 4th)

OBJECT ORIENTED ANALYSIS AND DESIGN

SUBJECT CODE : MCA - 405 C (Elective - I)

Paper ID : [B0121]

[Note : Please fill objective and paper ID on OMR]

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) Attempt any one question from each Sections - A, B, C, & D.
2) Section - E is Compulsory
3) Use of Non-Programmable Scientific Calculator is allowed.

Section - A

(1 × 10 = 10)

Q1) When a child class inherits from a base class, will the child class inherits everything of the base class, including all member variables and functions? Also explain the difference between abstraction and data hiding?

Q2) What are the advantages of polymorphism and dynamic binding? With a suitable example explain how to design a class. Give all possible representation in a class (name, attribute, visibility, methods, and responsibilities).

Section - B *(1 × 10 = 10)*

Q3) What is the difference between a "assignment operator" and a "copy constructor"? What is the meaning of polymorphism?

Q4) How can C++ achieve dynamic binding yet also static typing? When should a destructor be virtual?

Section - C *(1 × 10 = 10)*

Q5) What are the differences between overloading and overriding? Are they both concepts of polymorphism? Can I call the constructor of the base class? Can constructors be overloaded? Justify each answer.

Q6) What are various types of files? What are the various modes in which a file can be opened? Explain by giving examples.

Section - D

(1 × 10 = 10)

Q7) Give guidelines for identifying objects in object oriented analysis. Compare Object Oriented Analysis and data structure oriented analysis.

Q8) Based on your experience with a Bank ATM, draw an ER diagram modeling the data processing involved when a customer withdraws cash from an ATM machine.

Section - E

(10 × 2 = 20)

Q9)

a) Differentiate persistent and non-persistent objects.

b) What do you meant by static and dynamic modeling?

c) What is the role of an object in C++?

d) What are models and meta models?

e) In C++, what is operator >> called?

f) When is a constructor called?

g) What the use of preprocessor directory (# include)?

h) What is function overloading in C++?

i) How is a constructor different from destructor?

j) By default, what are fields in a C++ class called?

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