

**Punjab Technical University**  
**Master of Computer Application Examination**

**MCA 4<sup>th</sup> Semester OBJECT ORIENTED ANALYSIS AND DESIGN 2008**  
**(ELECTIVE-1)**

**Time :03 Hours**

**Max Marks: 60**

**Instructions to the candidates:**

**1) Attempt any one question from each sections A,B,C& D.**

**2) Section E is compulsory.**

**Section – A**

Q1) Write short notes on following:-

- a) Multiple Inheritance
- b) Implicit sub-typing versus Explicit Inheritance.

Q2) Explain method overriding with a suitable example. (10\*1=10)

**Section – B**

Q3) Explain operator overloading of binary operator with a suitable example.

Q4) What is meant by classes within the class? How can we declare a class and object? Explain with the help of example. (10\*1=10)

**Section – C**

Q5) Discuss in detail object oriented development.

Q6) What is a template? How are they created? Explain with the help of example (10\*1=10)

**Section – D**

Q7) Prepare a detailed object diagram for a participant's registration system for a seminar. Also give appropriate justification for the object diagram.

Q8) Discuss a relationship between various models. (10\*1=10)

**Section – E**

- Q9) a) What do you understand by an abstract data type?
- b) How is message passing in object oriented languages?
- c) Differentiate between a normal function and a macro.
- d) What is encapsulation?
- e) What are friend function?

- f) What is the difference between public and private derivation?
- g) How are libraries designed?
- h) What is object design?
- i) What is need modeling?
- j) What is entity relationship modeling? (10\*2=20)