



Name :

Roll No. :

Invigilator's Signature :

CS/M.Tech(CSE)/SEM-2/MCSE-203/2013

2013

OBJECT ORIENTED DESIGN AND ANALYSIS

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Very Short Answer Type Questions)

1. Answer any *five* of the following : $5 \times 2 = 10$
 - i) What are the modelling notations present in UML to express an analysis model ?
 - ii) What will be the output of the following code ?

```
#define x4-2
main ( ) {
    int y = x * x;
}
```

If you replace #define with const then what will be the output ?
 - iii) What is domain analysis ?
 - iv) What is message ?
 - v) When do we use scope resolution operator (::) ? Give example.
 - vi) What are the different types of access specifier ?
 - vii) What is Mutable data member ?



GROUP – B

(Long Answer Type Questions)

Answer any *four* of the following.

$$4 \times 15 = 60$$

2. a) What is reference variable ? What is the difference between class and object ?
- b) Compare between structured oriented programming and object oriented programming.
- c) What is operator overloading ? Explain with examples. Write down its advantages in C++ programming.

$$(3 + 2) + 2 + (2 + 3 + 3)$$

3. a) What is Inline function ? Give examples.
- b) What is polymorphism ? What do you mean by compile time polymorphism ?
- c) What are abstract data type and data encapsulation ? What is function overloading ?

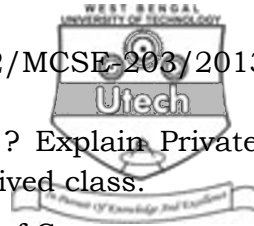
$$(2 + 3) + (2 + 3) + (2 + 3)$$

4. a) In which context object oriented software engineering differs from conventional software engineering ?
- b) Discuss the object oriented process model with the help of proper diagram.
- c) Establish the concepts of object oriented software engineering in terms of operation, methods and services.

$$5 + 5 + 5$$

5. a) What is Copy Constructor ? Give examples.
- b) What is the importance of Constructor and Destructor function ?
- c) What is the difference between the constructors —
 $A : : A ()$ and $A : : A (int = 0)$?
- d) Discuss different types of inheritance of C++.

$$(2 + 2) + 3 + 3 + 5$$



6. a) What is super class and base class ? Explain Private, Public, Protected derivation in the derived class.
 b) Discuss different types of inheritance of C++.
 c) What is function overriding ? What is the difference of overloading and overriding ? $(2 + 4) + 4 + (2 + 3)$
7. a) What do you mean by object oriented project metrics ? Explain each project metric which are suggested by Lorenz & Kidd.
 b) How are those metrics used to estimate the cost ? $(2 + 6) + 7$
8. a) In UML, what are the different types of views that are used to describe the system from distinctly different perspective ?
 b) How the object oriented analysis model can be translated into object oriented design model ? Discuss with proper diagram.
 c) What are the five criteria for judging a design method ability to achieve modularity ? $6 + 6 + 3$
9. Write short notes on any *three* of the following : 3×5
 - a) Inline functions *vs* Macros
 - b) Benefits of Object Oriented Programming
 - c) Early binding *vs* Late binding
 - d) Friend function
 - e) Function templates.

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