C 32074 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2007

IT 2K 603—DATA MODELLING OF DESIGN

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

1. (a) Define objects of classes with examples.

   (b) What are member functions ? What are the effects of private, protected and public specifiers for member functions ?

   (c) How to build a good class model ?

   (d) Explain the multiplicities in association.

   (e) What is cohesion ? Explain with example.

   (f) With a diagram, illustrate the use of sequence diagram.

   (g) Differentiate mix in class with aggregate classes.

   (h) Discuss the features of components.

   (8 × 5 = 40 marks)

2. (a) (i) Explain how object oriented approach is different from traditional methods. (8 marks)

   (ii) Differentiate objects and attributes. How certain attributes can become objects ? Explain. (7 marks)

   Or

   (b) (i) With examples, explain Typing and Binding. (8 marks)

   (ii) What is operator overloading ? Illustrate with examples. (7 marks)

3. (a) (i) What is use case model ? Explain with suitable examples. (8 marks)

   (ii) How do generalisation and specialisation differ from each other ? (7 marks)

   Or

   (b) (i) What are the major components of collaboration diagram ? Also discuss how interactions can be defined in such diagrams. (8 marks)

   (ii) Write note on Deployment diagram. (7 marks)

4. (a) (i) Bring out and describe various classes, state spaces, hierarchy occurring in an automated banking system. (8 marks)

   (ii) Explain how class invariants, preconditions, post conditions play vital role in the design of object-oriented systems. (7 marks)

   Or

Turn over

(b) (i) Consider the student information system development. Bring out possible classes, subclasses, principles of type conformance and closed behaviour. (8 marks)

(ii) Explain window layout and window navigation diagrams. (7 marks)

5. (a) (i) What are the problems encountered in multiple inheritance ? How can they be rectified ? (8 marks)

(ii) Compare light weight and heavy weight components. (7 marks)

Or

(b) (i) Define "Rings of operations"—Coupling. (8 marks)

(ii) Write note on component based system development. (7 marks)

[4 × 15 = 60 marks]