D 51645 **(Pages : 2)** **Name**.....

Reg. No.....

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION DECEMBER 2008

IT 04 506—DATA MODELLING AND DESIGN

(2004 admissions)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

I. (a) Define : class and object with examples.

(b) What is meant by 'class hierarchy' ? Explain.

(c) Define association. Also, explain various cardinalities present in association.

(d) Explain interface diagram with example.

(e) Describe the structure of Encapsulation.

(f) What are class invariants ? Explain.

(g) Explain over-riding with examples.

(h) Differentiate light weight and heavy weight components.

(8 × 5 = 40 marks)

II. (a) Compare object oriented programming with procedure oriented programming with examples. (15 marks)

Or

(b) Define :

Abstraction ; Encapsulation ; Message passing ; Dynamic Binding ; Reusability. (15 marks)

III. (a) (i) Explain collaboration diagram with an example. (8 marks)

(ii) Explain the concept of 'package'. (7 marks)

Or

(b) Discuss the significance of :

Deployment diagram ;

Navigation diagram

with proper examples. (15 marks)

IV. (a) Explain :

Class cohesion ; Principles of Type conformance ; Principles of closed behaviour. (15 marks)

Or

(b) Consider ATM example. Provide class diagram and state transition diagram with neat diagram. (15 marks)

Turn over

(a) (i) Compare components with objects. (8 marks)

(ii) Explain polymorphism with example. (7 marks)

Or

(b) (i) Write note on various types of inheritances. (8 marks)

(ii) Consider reservation of tickets in a railway station. Provide use case diagram and also various classes with their definitions. (7 marks)

[4 × 15 = 60 marks]