K 1224

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2004.

Fifth Semester

Information Technology

IF 354 — OBJECT ORIENTED ANALYSIS AND DESIGN

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by Inheritance? Explain with a suitable example.

2. What is an abstract class? Give an example.

3. How Object Oriented analysis is different from Object Oriented Design?

4. What do you mean by Macro Development Process?

5. What are the uses of UML Use Case diagram?

6. How does a State chart diagram differ from Activity diagrams in UML?

7. What do you mean by a reference object, and a value object?

8. 'A prototype is worth thousand pictures (Diagrams)' — Justify this with respect to software development.

9. What is an Asynchronous message? How an Asynchronous message is represented in Sequence Diagram?

10. What is UML? Explain advantages of UML.

PART B — (5 × 16 = 80 marks)

11. (i) Explain Polymorphism and its advantages with an example. (8)

   (ii) Suppose that a Computer is built out of one or more CPUs, sound card and video card. If we model the system with representative classes draw the class diagram (relationship and multiplicity) among the following classes : Computer, CPU, sound–card and video card. (8)

12. (a) (i) Draw Class Inheritance diagram that captures the two categories of a company's customers : external customers, who are other companies, and internal customers, which are all the divisions within the company. (8)

(ii) When is it appropriate to model with Composition? For example, why not use the UML Composition notation to show that a dog is composed of height, weight, color, and date of birth? (8)

Or

(b) Do you think that software is inherently complex? Why? Justify your answer. (16)

13. (a) Compare and contrast between Sequence and Collaboration diagrams with help of example diagrams. (16)

Or

(b) Draw an Object–aggregation diagram for a book chapter with the following structure : A chapter comprises several sections, each of which comprises several paragraphs and figures. A paragraph comprises several sentences, each of which comprises several words. (16)

14. (a) Explain Association, Composition and Generalization with suitable examples. (16)

Or

(b) Explain the different implementation diagrams in UML. Give examples.

(16)

15. (a) (i) What are the advantages and disadvantages of using OOAD? (6)

(ii) What is object–oriented analysis? Explain the various steps involved. (10)

Or

(b) With example explain Static and Dynamic behaviour of an object oriented system? How the static and dynamic behaviours are identified and documented? (16)

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