

8. (a) Explain in brief the purpose of analysis. Why is analysis needed? 7
- (b) Explain why analysis is a difficult activity. 7
9. For the following systems, identify and explain the relative importance of the three aspects of modelling—class modelling, state modelling and interaction modelling : 7+7=14
- (a) Bridge player
- (b) Change-making machine

OBJECT-ORIENTED ANALYSIS AND DESIGN

Time : 3 hours

Full Marks : 70

Instructions:

- (i) The marks are indicated in the right-hand margin.
- (ii) There are **NINE** questions in this paper.
- (iii) Attempt **FIVE** questions in all.
- (iv) Question No. 1 is compulsory.

1. Answer/Choose the correct option of the following (any seven) : 2×7=14

- (a) What are the characteristics of an object?
- (b) What is a class?
- (c) What is multiple inheritance?
- (d) What are the diagrams used in Booch methodology?
- (e) Define static model.
- (f) What is a method?
- (g) What are the different types of attribute?

(2)

(h) CASE tool is

- (i) Computer-Aided Software Engineering
- (ii) Component-Aided Software Engineering
- (iii) Constructive-Aided Software Engineering
- (iv) Computer Analysis Software Engineering

(i) An object encapsulates

- (i) data
- (ii) behaviour
- (iii) state
- (iv) both data and behaviour

(ii) The feature of the object-oriented paradigm which helps code reuse is

- (i) object
- (ii) class
- (iii) inheritance
- (iv) aggregation

2. (a) Explain in brief the four phases in OMT. / 4 7

(b) Explain about aggregation and composition. / 7

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(3)

3. Explain the term UP (unified process). What are the different phases of UP? Explain each of them in brief.

4. Consider a computer e-mail system.

- (a) List three actors. Explain the relevance of each actor.
- (b) Prepare a use-case diagram.

5. Prepare a class diagram for the dining philosopher problem. There are 5 philosophers and 5 forks around a circular table. Each philosopher has access to 2 forks, one on either side. Each fork is shared by 2 philosophers. Each fork may be either on the table or in use by one philosopher. A philosopher must have 2 forks to eat.

6. Explain in brief about association. How can associations in UML be implemented?

7. Explain in brief about the sequence diagram. What are the different notations used in sequence diagram? Explain each of them in brief.

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