

**Seventh Semester B.E. Degree Examination, June/July 2013**  
**Object Oriented Modeling and Design**

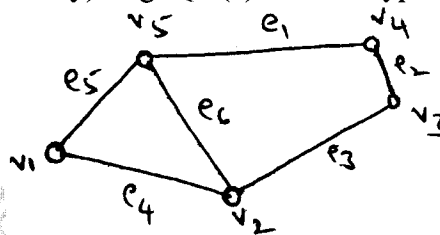
Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

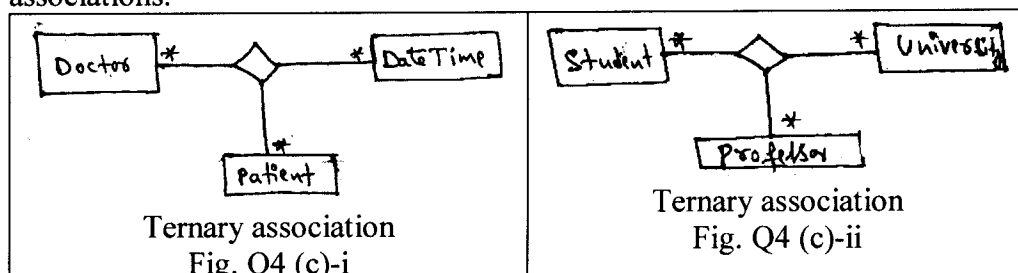
- 1 a. Explain the different stages of OO methodology? (05 Marks)  
 b. Define the following with an example:  
 i) Object    ii) Class    iii) Class diagram    iv) Attributes    v) Operation (10 Marks)  
 c. Prepare a class model to describe undirected graph. Your model should capture only the structure of graph (i.e. connectivity). Fig. Q1 (c) shows a typical undirected graph. (05 Marks)



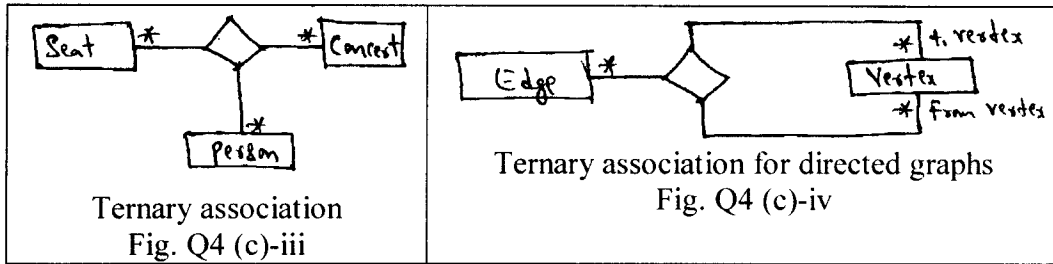
Sample undirected graph

Fig. Q1 (c)

- 2 a. Explain the different properties of an association end? (06 Marks)  
 b. Prepare a metamodel that supports only the following UML concepts: class, attribute, association, association end, multiplicity, class name and attribute name. Use only these constructs to build your metamodel. (08 Marks)  
 c. Explain the several kinds of events with an examples. (06 Marks)
- 3 a. Explain the guidelines for the following models:  
 i) Sequence models.  
 ii) Activity models. (08 Marks)  
 b. Explain the following with an example for designing advanced sequence models:  
 i) Active objects  
 ii) Passive objects  
 iii) Transient objects. (12 Marks)
- 4 a. Mention the different stages of software development process. (04 Marks)  
 b. What criteria would you like take into consideration to select the right attributes? Explain. (08 Marks)  
 c. Revise the diagrams in Fig. Q4 (c)-i, Q4 (c)-ii, Q4 (c)-iii, Q4 (c)-iv, to eliminate ternary associations. (08 Marks)

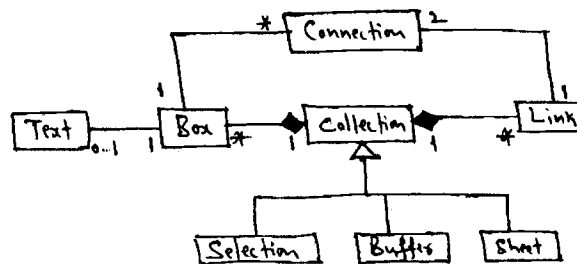


4 c Contd....



**PART – B**

- 5 a. Analyse the different use-cases by designing a use-case diagram for the ATM example. (08 Marks)
- b. Explain all the steps for constructing an application class model. (08 Marks)
- c. Write an advanced use-case model to Show different types of relationships for the ATM case study. (04 Marks)
  
- 6 a. Explain all the steps for designing a class. (05 Marks)
- b. Explain the several ways to hide information while organizing a class design. (05 Marks)
- c. Implement each association in Fig. Q6 (c). Use one-way pointers wherever possible. Should any of the association ends be ordered? Explain your answers. (10 Marks)



Class diagram for a diagram editor  
Fig. Q6 (c)

- 7 a. Explain briefly the template for pattern description. (10 Marks)
- b. Two peers P1 and P2 communicate with each other. For this purpose, P1 uses a forwarder Forw1 and receiver Recv1, P2 handles all messages transfers with a forwarder Forw2 and a receiver Recv2. Design a scenario which illustrates a typical example of this use of a forwarder-receiver structure. (10 Marks)
  
- 8 a. Write a short note on:
  - i) Command processor design pattern.
  - ii) View handler design pattern. (10 Marks)
- b. What are idioms and styles? Explain with the help of an example, a style guide idiom. (10 Marks)

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