



Name : .....  
Roll No. : .....  
Invigilator's Signature : .....

**CS/M.Tech (IT)/SEM-1/PGIT-104/2012-13**

**2012**

**INFORMATION SYSTEM DESIGN**

*Time Allotted : 3 Hours*

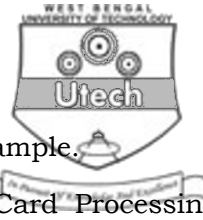
*Full Marks : 70*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

*Answer Question No. 1 and any five from the rest.*

1. Answer any *five* of the following :  $5 \times 2 = 10$ 
  - a) What is an object flow ?
  - b) What do you mean by the calls relationship ?
  - c) What do you mean by a multi-valued attribute ?
  - d) What is the significance of flat messages in UML ?
  - e) How does UML help in software testing ?
  - f) How would you represent constraints in OMT notation ?
  - g) What do you mean by class descriptor ?
2.
  - a) How does the sequence diagram differ from the collaboration diagram ?
  - b) Draw a sequence diagram for online bookshop.
  - c) How aggregation is different from composition – explain with proper example using UML notation.  $2 + 6 + 4$



3. a) Explain the history state with proper example.  
b) Draw a use case diagram for Credit Card Processing System. 5 + 7
4. a) Explain the different kinds of aggregates with proper example.  
b) Describe the major elements of the object model. 5 + 7
5. a) How is recursion represented in a collaboration diagram ?  
b) Describe the different types of messages available in the sequence diagram.  
c) What are the goals of UML ? 2 + 5 + 5
6. a) Draw a class diagram for Hospital Management system.  
b) What do you mean by state and behaviour of an object and how are they related ? 7 + 5
7. a) Why is UML called *unified* ?  
b) Explain access and import dependency with proper example.  
c) How iteration is modeled in a sequence diagram ? 6 + 4 + 2
8. a) Explain the difference between generalization and realization relationship with proper example using UML diagrams.  
b) Draw a state transition diagram showing the different states of a program being executed on a computer. 5 + 7