

Con/4838-07.

(REVISED COURSE)

CD-5574

(3 Hours)

[Total Marks : 100]

N.B. : (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions out of remaining **six** questions.(3) Make **suitable** assumptions wherever **necessary** and state them.

1. (a) Explain features of object oriented programmings with suitable example ? 10  
(b) What are the use case analysis steps ? Explain with example. 10
2. (a) Draw the class diagram for following scenario : 10  
A library lends books and magazines to members, who are registered in the system. Also it handles the purchase of new titles for the library. Popular titles are bought in multiple copies. Old books and magazines are removed when they are out of date or in poor condition. A member can reserve a book or magazine that is not currently available in the library, so that when it's returned or purchased by the library, that person is notified. The library can easily create, update and delete information about the titles, members, loans and reservations in the system.  
(b) Construct the activity diagram for above scenario. 10
3. (a) State UML dynamic diagrams. Explain any one in detail with example. 10  
(b) Define model and what are the benefits of a use-case model. 10
4. (a) Explain following terms : 10  
(i) Association  
(ii) Aggregation  
(iii) Multiplicity  
(iv) Generalization.  
(b) What is functional modeling ? Explain different steps that are performed in constructing functional model ? 10
5. (a) Explain object oriented metrics and testing ? 10  
(b) State different types of coupling and cohesion. Explain any four types of both coupling and cohesion. 10
6. (a) Construct the class diagram for cellular phone. 10  
(a) Construct the state transition diagram for following scenario; student information system – 10  
The University conducts many courses and students can register for those courses. The registrar of the University will introduce any new course. Also the registrar maintains the curriculum and students details. The examination will be conducted for the students and the degree is issued for the students who have completed the course successfully.
7. (a) Construct the activity diagram for trading system which should take care of sales information of the company and must analyze the potential of trade. 10  
(b) Construct the sequence diagram for the above scenario. 10