

M.C.A. (Sem – IV)
Object Oriented Modeling and Design
Using UML
(May-2017)

Q. P. Code : 08682

(3 Hours)

(Total Marks : 100

1 is compulsory.

Four out of remaining six.

3. Elaborate **each** answer with the help of **an example**.

1. (a) Draw a Use Case Diagram for a video store kiosk system. The software can be used for looking up movies and actors by keywords, as well as usable to check out movies from the kiosk to known customers, without a cashier present. A customer can check out up to 3 movies at a time, for up to 5 days each. If a movie is returned late, late fees can be paid at the time of return or time of next checkout. The data is stored internally in a database system, which communicates with the kiosk. The manager of the store can log in to update employee data. **(10)**
- (b) Explain the following concepts : **(10)**
 - (I) Activity
 - (II) Event
 - (III) UMI
 - (IV) Actors
2. (a) Describe “ Architectural patterns” and “Design patterns” **(10)**
- (b) Differentiate between : **(10)**
 - (I) Specialization / Generalization
 - (II) Aggregation / Composition
3. (a) Draw a activity diagram to model flow for “Goods returning System” **(10)**
- (b) Explain reuse of classes and component. **(10)**
4. (a) Explain with example composite states and parallel states of state diagram. **(10)**
- (b) Explain three tiered logical Architecture. **(10)**
5. (a) How can you show the following in class diagram? **(10)**
 - (I) Ternary Association
 - (II) Qualified Association
 - (III) Constraint
 - (IV) Abstract Class
 - (V) Actor Class
- (b) Explain functional Modeling and object Modeling. **(10)**
6. (a) Explain the top down approach for dynamic system. **(10)**
- (b) Draw a sequence diagram for “Appointment of patient” of Hospital management system. Hospital management system helps in registering information about patients and handles patient’s query. A unique ID is generated for each patient after registration. This helps in implementing customer relationship management and also maintains medical history of patient. This system also monitors the doctor appointments, when the ID is generated the patient receives the appointment time and number from the receptionist and accordingly visit the doctor. This system also deals with testing appointments as and when ID is generated the patient receives the appointment time and number and accordingly undergoes the test. **(10)**
7. Write Short Notes on any four :- **(20)**
 - (I) Collaboration Diagram
 - (II) Inheritance
 - (III) Cohesion
 - (IV) Swim lanes
 - (V) Noun Phrases