Attempt all the questions.

1.   a)"Good and precise requirements leads to good design." Justify the statement stating the significance of OODM in UML. (7)
      b) Define Multiplicity and Association Class with an example. Explain formats of writing Use Case Text. (2+6)

2.   a) What is the significance of constructing a Domain Model? How do you construct a Domain Model? Explain with reference to Online Flight Reservation System. (8)
      b) What is the significance of using Interaction Diagram using OOD? Compare and contrast Sequence Diagram and Collaboration Diagram in terms of its weakness and strength. (7)

3.   **CASE STUDY: Online Movie Ticket Booking App (eg. QFX Movies)**
      Admin Profile:

      The admin has full access to the system. Admin can graphically view all the details, and he has the authority to change the Cost of tickets, ticket Availability and much more. He can put various kinds of notifications on the website. He can also check the details of seats left and seats reserved. He can also monitor the transactions made throughout the day and the month and an algorithm will check the progress in the booking of tickets. He can add new movies and their show timings.

      Viewer/User Profile:

      In Viewer profile, the viewer can check the availability of tickets and their category. The category can be silver, gold or platinum and they can also book their ticket according to their budget and need. Viewer profile contains their name, Contact details, address, and other necessary personal data, etc.

      They need to sign-up for booking the movie ticket, which will make them as well as the manager or the owner of the hall to interact with each other easily. They can pay the amount Online, and if they need to make payment Offline, they must deposit some advance amount to confirm their movie ticket.

      Ticket Booking:

      The viewer can quickly search for the desired movie and the number of seats from the various options available. This all will be so user-friendly that the audience will not find any trouble in booking the movie ticket.

      Once the available movies are searched, and viewer finds the movie of his choice then this module helps the audience to book the film. If everything is done properly, he will

be asked to pay partial or complete money. And then he will be forwarded to Payment Gateway where he can quickly pay Online.

a) Draw Use-Case Diagram for the above case study. (8)
b) Draw Class Diagram showing all the software classes for the system. (7)

4. a) Differentiate Responsibilities, Methods and Operations. Explain the Doing and Knowing responsibilities of an object with appropriate examples. (3+5)
b) "Contracts in UML provides a more detailed description of system behavior when use cases are insufficient." Explain this statement with an example. (7)

5. a) What is GRASP? Compare and Contrast High Cohesion Pattern and Low Coupling Pattern with an example. (8)
b) Explain the concept of Visibility between objects with its types. (7)

6. a) Explain the steps for mapping design to code. Explain with an example. (8)
b) What do you mean by Exception in OOA/D? How are exceptions addressed and illustrated by UML in Class Diagram and Sequence diagram? (7)

7. Write short notes on (any two). 2×5=10
a) Information Expert Pattern
b) Composition Vs Aggregation
c) Component Diagram Vs Deployment Diagram
d) Unified Process