**United College of Engineering and Research, Prayagraj**

**Department of Computer Science & Information Technology**

**Object Oriented System Design (KCS-056)**

Question Bank based on unit-1 and Class Diagram of Unit-2

Section-A (Short answer based questions)

1. Is association class same as ordinary class? Explain with example. (CO2)K3
2. Difference between private & protected visibility mode. (CO2)K3
3. Difference between ordered and sequences in class diagram. (CO2)K3
4. Difference between Composition & Aggregation. (CO2)K3
5. Give UML notation for visibility. (CO2)K3
6. Differentiate compile & run time polymorphism. (CO1)K1
7. State any two principles of modeling. (CO1)K1
8. Give example of association end names. (CO2)K3
9. What is a qualified association? (CO2)K1
10. Difference between Activity diagram & Flow chart (CO1)K2

Section-B (Medium answer based questions)

1. Briefly explain following characteristics of object oriented systems: Identity, inheritance, encapsulation, polymorphism. (CO1)K1
2. Why model is required in analysis and design? What is the role of UML in preparing

the model? (CO1)K2

1. Explain following terms with suitable UML notations with respect to class model. Qualified association, Association class, Aggregation, Multiplicity (CO2)K2
2. Write short notes on 1) Deployment diagram. 2) Component diagram. (CO1)K2
3. What are the dissimilarities between a sequence diagram and collaboration diagram?

(CO1)K2

1. What does the term object oriented mean? Explain the four aspects included in object oriented approach? (CO1)K1,K2
2. What is an abstract & concrete class? Explain with example. (CO2)K1
3. Which type of associations provides compelling rationale for association classes? Give example of attributes for one to many associations. (CO1)K3
4. Write four principles of modeling & justify their relevance with suitable example.

(CO1)K3

1. What is object-orientation? Why model is required in analysis and design?

(CO1)K1

1. What is inheritance? List the different types of inheritance and explain how it encourages reusability and sharing. (CO1)K2
2. What is the purpose of class modeling? Explain following concept with example.

i) Aggregation versus association

ii) Aggregation versus composition (CO1)K2

Section-C (Long answer based questions)

1. Why model is required in analysis and design? What is the role of UML in preparing the model? Explain the types of model with their purpose in brief. Which of these models belong to structural group and which of them fall under behavioral group? (CO1)K1,K2
2. Define the purpose of following terms with suitable example and UML notations with respect to class model.

(i) Qualified association (ii) Association class (iii) Aggregation (iv) Multiplicity (CO1)K1,K2

1. Prepare a class model for the hotel management system.

The system should supports chain of hotels. A hotel contains two categories of rooms: executive and normal, both AC and non-AC. The customers of executive rooms can avail extra facilities like games, swimming, food service in rooms, etc. The booking is possible by internet or by phone. If the booking is through phone, process is done by receptionist, and if booking is done through internet the process is carried out by customer through hotel website. Depending on the number of days customer stays, appropriate bill is generated. The bill also contains amount for transport, food and other facilities enjoyed by the customer along with necessary taxes. The manager should be able to generate reports like list of customers staying in the hotel, list of rooms empty, monthly/yearly income, etc . (CO2)K3,K4

1. Prepare a class diagram for a graphical document editor that supports grouping. Assume that a document consists of several sheets. Each sheet contains drawing objects, including text, geometrical objects and groups. A group is simply a set of drawing objects, possibly including other groups. A group must contain at least two drawing objects. A drawing object can be a direct member of at most one group. Geometrical objects include circle, ellipses, rectangles, lines and squares. (CO2)K3,K4
2. What is the purpose of interaction model? Identify the UML diagram used to represent this model and explain the objectives of each. (CO1)K1,K2
3. Prepare a class diagram for group of classes.

Sink, freezer, refrigerator, table, light, switch, window, smoke alarm, burglar alarm, cabinet,

bread, cheese, ice, door, kitchen. (CO2)K3,K4