

POKHARA UNIVERSITY

Level: Bachelor

Semester – Spring

Year: 2020

Program: BE

Full Marks: 70

Course: Object Oriented Design and Modeling through UML

Pass Marks: 31.5

Time: 2 hrs.

Candidates are required to answer in their own words as far as practicable.

Answers with a valid set of UML diagrams indicate full marks.

Attempt all the questions.

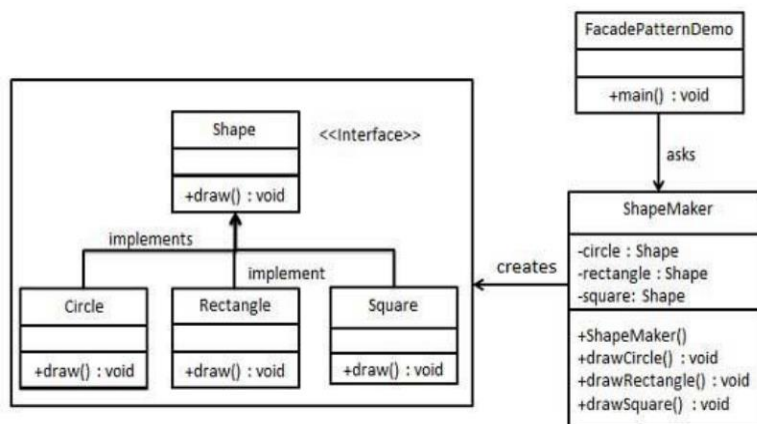
Group - A: (5×10=50)

- Q. N. 1 Discuss the emergence of OOA and OOD phases in addition to the existing OOP. Support your answer with key activities in each phase chronologically. 10
- Q. N. 2 Differentiate the structural and behavioral analysis process. Elaborate your understanding by using appropriate artifacts for both. 10
- Q. N. 3 Consider a business of your choice and develop a domain model. Follow the standard practices to find conceptual classes, attributes and associations to develop the domain model. 10
- Q. N. 4 Differentiate sequence diagram with collaboration diagram. Why Contracts are used and what are its format? 10

OR

What is visibility in OOAD? Describe its role in obtaining high abstraction.
What are the various types of them? Elaborate using diagram and code snippets.

- Q. N. 5 Convert the diagram into code using any of the object oriented languages (C++, Java etc.) 10



Group - B: (1×20=20)

Q. N. 6

Case Study

20

Due to COVID-19 outbreak many sectors have been seriously affected. Face masks are mandatory in public places because it is a respiratory sensitive disease. A reputed hospital in Kathmandu wants to hire a software development team to develop a smart face mask detection system.

The system needs to be connected with several cameras for detecting human faces to make sure whether there is anyone without a face mask. The admin can add different wards with details including a supervisor and rooms with cameras in each ward. The supervisor can monitor own ward with a dashboard showing the total number of faces with mask and without masks. Additionally, there is a smart entrance gate that will block the people without a face mask.

Consider yourself as a team lead of the software development team. Illustrate your understanding about the context by developing and finalizing the following artifacts.

Use Case Diagram, Sequence Diagram, Class Diagram, Communication Diagram .