



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DIPLOMA IN COMPUTER SCIENCE

COSC 0231: OBJECT ORIENTED ANALYSIS AND DESIGN

STREAMS: DIP (COMP SCI) Y2S1 TIME: 2 HOURS

DAY/DATE:

INSTRUCTIONS:

- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, No reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely.
- Marks are awarded for clear and concise answers.

SECTION A

QUESTION ONE (30 Marks)

a. Name and state the use of the following symbols in Activity Diagrams
Symbol
Use

(6 marks)





b. Difference between a State Diagram and a Flowchart?	(3 marks)
c. List and Explain the steps required to develop an SSD	(4 marks)
d. List ANY TWO rules for creating a Package Diagrams	(4 marks)
e. List Four open-source UML development Tools	(4 marks)
f. Name the elements not suitable in a domain model?	(2 marks)
g. Why are UML conceptual models considered important in software development? [4 marks]	
h. How is UML different from programming languages such a Java, C++	[3 marks]
SECTION B (Answer any TWO questions Only)	
QUESTION TWO (20 Marks)	
a. Things are the most important building blocks of UML, Explain	(10 marks)

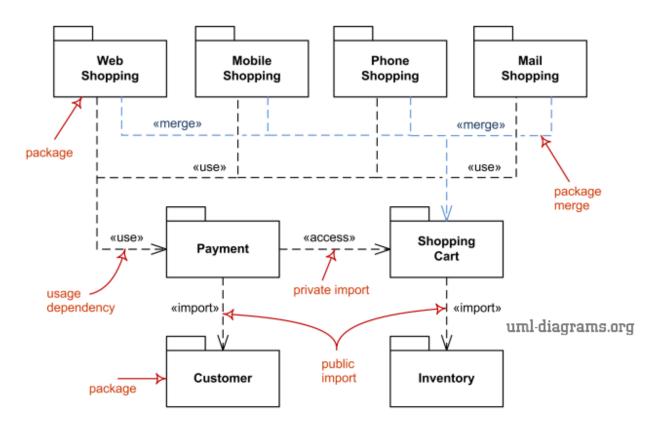
(10 marks)

- i. Class Notation
- ii. Interface Notation
- iii. Collaboration Notation
- iv. Initial State Notation
- v. Final State Notation

QUESTION THREE (20 Marks)

b. Explain the following notations in UML

a. The following is an example of a UML system:



i. Classify the UML diagram

(2 marks)

ii. List Five major elements of diagram

(5 marks)

iii. Explain TRANSACTION of above UML diagram

(8marks)

b. State and Explain Four scenarios where State chart Diagrams would be most applicable. (5 marks)

QUESTION FOUR (20 Marks)

a. GoF/Gang of four created 23 patterns as the basis of all other UML patterns, briefly explain the following GoF patterns (10 marks)

- 1. Abstract Factory:
- 2. Builder:
- 3. Adapter:
- 4. **Bridge**:
- 5. Memento:

b. List and Explain, any 5 fundamental objects of UML

(10 marks)

QUESTION FIVE (20 Marks)

- **a.** Choose a software system of your choice, Describe the steps you would use to create a UML Diagram for your chosen software system (10 marks)
- **b.** Briefly explain the following relationships in class diagrams (10 marks)
 - i. Directed Association
 - ii. Reflexive Association
 - iii. Multiplicity
- iv. Aggregation
- v. Composition

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