

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

CHUKA & EMBU

SECOND YEAR EXAMINATION FOR THE AWARD OF DIPLOMA IN
COMPUTER SCIENCE

COSC 0231: OBJECT ORIENTED ANALYSIS AND DESIGN

STREAMS: DIP. COMP. SCI Y2S2

TIME: 2 HOURS

DAY/DATE: THURSDAY 25/03/2021

2.30 P.M. – 4.30 P.M

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.

SECTION A (ANSWER ALL QUESTIONS)

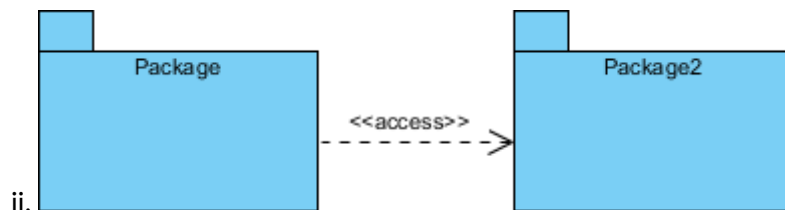
QUESTION ONE (30 MARKS)

a. Difference between a State Diagram and a Flowchart (4 marks)

b. Explain the Following Dependency notations



(2 marks)



(2 marks)

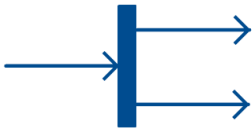




c. What is the role of UML in OO Design (3 marks)

- d. 23 GoF patterns are generally considered the foundation for all other patterns. List the THREE categorized three groups (3 marks)
- e. Explain the following Patterns for UML design
 - i. Abstract Factory (2 marks)
 - ii. Builder (2 marks)
 - iii. Prototype (2 marks)
- f. List Three symbols used in an SSD/System Sequence Diagram (3 marks)
- g. Differentiate OMG from Objects in UML (4 marks)
- h. What is the role of UML in OO Design (3 marks)

SECTION B (ANSWER ANY TWO QUESTIONS)

QUESTION TWO (20 MARKS)

- a. What are the Name(s) and Use of the following symbols in ACTIVITY Diagrams (10 marks)

Symbol	Name	Use
		
	Signal Sending	
	Signal Receipt	
		
		

- b. List Four applications of Class Diagrams (4 marks)

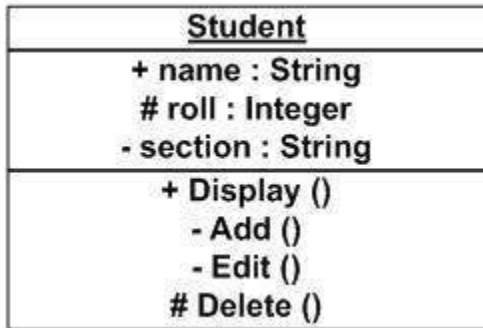
- c. State Four Benefits of Class Diagram (4 marks)
- d. List Two Essential elements of a UML class diagram (2 marks)

QUESTION THREE (20 MARKS)

- a. List and Explain THREE Constraints of using Package diagrams (6 marks)
- b. List and Describe the main purposes of using Statechart diagrams (6 marks)
- c. Describe the UML steps before drawing a Statechart Diagrams (6 marks)
- d. List TWO uses of State diagrams (2 marks)

QUESTION FOUR (20 MARKS)

- a. List and Explain the roles of FOUR perspectives in UML (8 marks)
- b. There are THREE different models of UML. List the models and in each model, provide TWO examples of diagrams (6 marks)
- c. The Following is a Class diagrams, Name the Three parts of the Class diagrams (6 marks)



QUESTION FIVE (20 MARKS)

- a. Define the Domain Model (3 marks)
 - b. Explain three elements that are not suitable in a domain model (6 marks)
 - c. What is common domain model (3 marks)
 - d. List the steps involved in Creating UML Diagrams (8 marks)
-