CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

Y2S2 EXAMINATION FOR THE AWARD OF DIPLOMA IN

COMPUTER SCIENCE

COSC 0231: OBJECT ORIENTED ANALYSIS AND DESIGN

STREAMS: DIPLOMA COMPUTER SCIENCE

Y2S1

TIME: 2 HOURS

CAMPUSES: MAIN CAMPUS, EMBU CAMPUS,

DAY/DATE: MARCH 2021…   ……….
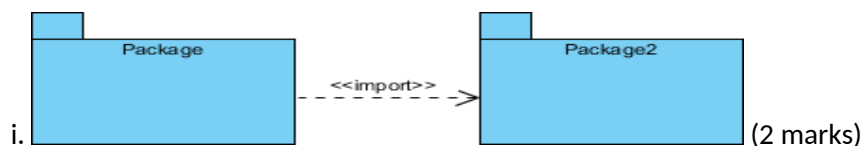
INSTRUCTIONS:

- 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
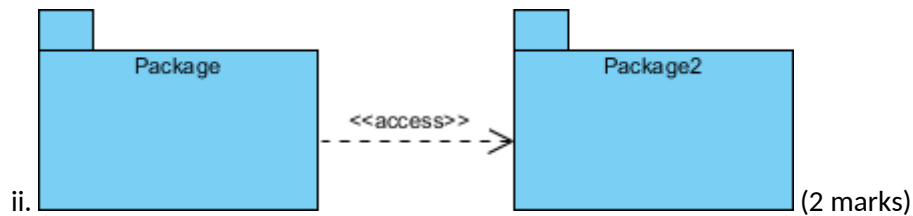- Write your answers legibly and use your time wisely.

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

i.   (2 marks)

ii. (2 marks)

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

d. 23 GoF patterns are generally considered the foundation for all other patterns. List the THREE categorized three groups (3 mks)

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 mks)

g. Differentiate OMG from Objects in UML (4 marks)

h. What is the role of UML in OO Design (3 mks)

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)

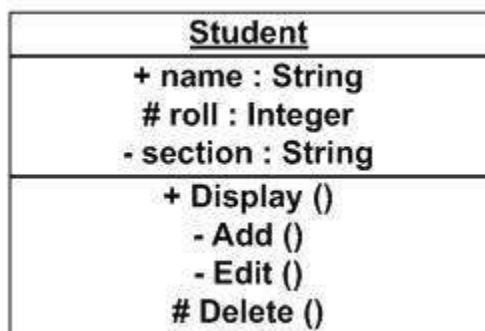| Symbol	Name	Use

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)

Student
+ name : String # roll : Integer - section : String
+ Display () - Add () - Edit () # Delete ()

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)