

UNIVERSITY OF BUEA	COLLEGE OF TECHNOLOGY
FIRST SEMESTER EXAMINATIONS	
MONTH: February	COURSE INSTRUCTOR: MEGOZE
YEAR: 2020	COURSE CODE & NUMBER: CEC 321
DATE: 25/02/20	COURSE TITLE: Programming with UML
TIME ALLOWED: 2 HOURS	TIME: 15H30-17H30

Exercise 1**10 marks**

- How do you represent a class in the UML?
- What information can you show on a class icon?
- What is a constraint?
- Why would attach a note to a class icon?
- How do you represent multiplicity?

Exercise 2**10 marks**

- What are the similarities between classes and use cases? What are the differences?
- In what important way does a state machine diagram differ from a class diagram, an object diagram or a use case diagram?
- Define the terms: transition, event, and action
- In UML, what is the purpose of diagrams?
- What is a use case? And what is its purpose?

Exercise 3**15 marks**

Create class diagrams that describe the classes and relationships depicted in the following scenarios:

Researchers are placed into a database that is maintained by the region of South West. Information of interest includes researcher name, title, position, date began current position, number of years at current position; university name, location, enrollment; and research interests. Researchers are associated with one institution, and each researcher can have up to five research interests. More than one researcher can have the same interest, and the system tracks the ranking of the best researchers for each interest. The system should be able to insert new researchers, universities, and research interests; produce information, such as the number of researchers at each university, contact information for the researchers, and research interests that do not have associated researchers; and change researcher rankings for the various research interests.