



SCHOOL OF PROFESSIONAL STUDIES
BACHELOR OF INFORMATION COMMUNICATION TECHNOLOGY
UNIT CODE/NAME: BCT 221: OBJECT ORIENTED ANALYSIS AND
DESIGN

January – April 2019/2020 End Semester Exam - Time: 2 Hours

Instructions: Answer Question ONE (Compulsory) and any other TWO questions.

QUESTION ONE

- a) With a suitable example, differentiate between Analysis and Design as used in Object Oriented Analysis and Design. **(4 marks)**
- b) Define the term UML and explain any **three** perspectives in which UML may be applied. **(8 marks)**
- c) Explain the following terms as used in Object Oriented Analysis and Design. **(10 marks)**
 - i. Class
 - ii. Object
 - iii. Polymorphism
 - iv. Message passing
 - v. Encapsulation
- d) Define *iterative development* and explain any **three** benefits of using it in software system development **(8 marks)**

QUESTION TWO

- a) Using an example of a “dice game” in which software stimulates a player rolling two dice, if the total is seven, they win; otherwise, they lose. Explain the three system Analysis and Design steps with illustrations under the following definitions;
- i. Use cases
 - ii. Domain model
 - iii. Interaction diagrams
- (15 marks)**

QUESTION THREE

- a) With an aid of a diagram, explain object-oriented system development life cycle.
- (15 marks)**

QUESTION FOUR

- a) What is agile modelling? **(1 mark)**
- b) Explain some of the practices and values one should consider when adopting agile modelling. **(14 marks)**

QUESTION FIVE

- a. Define the term Prototype and explain the various types of prototypes **(10 marks)**
- b. Define the following terms as used in state machines in OOP design
- i. Event **(1 mark)**
 - ii. State **(1 mark)**
 - iii. Transition **(1 mark)**
 - iv. Nested states **(2 marks)**