



Strathmore
UNIVERSITY

SCHOOL OF COMPUTING AND ENGINEERING SCIENCES (SCES)
BACHELORS OF SCIENCE IN COMPUTER NETWORKS AND CYBER SECURITY
END OF SEMESTER EXAMINATION
CNS 1207: OBJECT-ORIENTED PROGRAMMING I

DATE: 16th March 2022

Time: 2 Hours

Instructions

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

Question One [30 Marks]

- a) Explain the following 5 terms as used in Object-oriented programming: **(10 Marks)**
 - i. Event
 - ii. Instance variable
 - iii. Method
 - iv. Data hiding
 - v. Abstraction
- b) List down at least 4 data types that can be used in a Java program. **(4 Marks)**
- c) Briefly explain the difference between overloading and overriding. **(4 Marks)**
- d) Using a diagram, briefly describe how UML can be used to represent a class. **(6 Marks)**
- e) Using code segments, differentiate between a for-loop and a while-loop. **(6 Marks)**

Question Two [15 Marks]

- a) Using a real world example, explain the concept of inheritance as used in object-oriented programming. **(5 Marks)**
- b) Explain the significance of inheritance in object-oriented programming. **(2 Marks)**
- c) Using code excerpts, write 2 Java classes that illustrate the concept of inheritance. **(8 Marks)**

Question Three [15 Marks]

- a) Using a real world example, explain the concept of polymorphism as used in object-oriented programming. **(5 Marks)**
- b) Explain the significance of polymorphism in object-oriented programming. **(2 Marks)**
- c) Using code excerpts, write 2 Java classes the illustrate the concept of polymorphism. **(8 Marks)**

Question Four [15 Marks]

- a) Using a real world example, explain the concept of abstraction as used in object-oriented programming. **(5 Marks)**
- b) Explain the significance of abstraction in object-oriented programming. **(2 Marks)**
- c) Using code excerpts, write 2 Java classes the illustrate the concept of abstraction. **(8 Marks)**

Question Five [15 Marks]

- a) Using an example, explain the concept of event handling as used in object-oriented programming. **(4 Marks)**
- b) Discuss at least 5 best graphical user interface design guidelines. **(5 Marks)**
- c) Describe at least 3 Java packages that provide graphical user interface components. **(6 Marks)**