



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF ENGINEERING

SCE 221: COMPUTER PROGRAMMING II

DATE: TUESDAY 30TH NOVEMBER 2010

TIME: 8.00 A.M – 10.00 A.M

INSTRUCTIONS:

QUESTION ONE (*Compulsory*)

- (a) Discuss the main drawbacks of Structured programming Languages that necessitated advancement of OOP. (4 Marks)
- (b) Briefly discuss how the following features are supported in programming languages.
 - (i) Abstraction
 - (ii) Polymorphism
 - (iii) Overriding (6 Marks)
- (c) Define the following terms, give example in each case.
 - (i) Function overloading
 - (ii) Object
- (d) Under what circumstance would programmer prefer structures and not class. (6 Marks)
- (e) Write a program to capture distance traveled against time and display the data in a tabular form. (10 Marks)

QUESTION TWO

- (a) Describe any three properties of a storable data item. (6 Marks)
- (b) Describe how abstraction is achieved when using objects to implement systems. (6Marks)
- (c) Describe how code reuse speed up application development. (8 Marks)

QUESTION THREE

- (a) Explain main stages of application development. Discuss tools used in each stage.
(10 Marks)
- (b) What is template function?
(2 Marks)
- (c) Briefly outline main advantages and disadvantages of high level languages as compared to low level languages.
(8 Marks)

QUESTION FOUR

ITRC is pleased with your outstanding performance in information technology courses especially in programming. As such they would like to hire your services and attach you to library.

- (a) Write a program to capture details of available and new books.
(10 Marks)
- (b) Rewrite the program in **4(a)** this time include:
 - (i) Book borrowing
 - (ii) Book return
 - (iii) Display a list of available books.
(10 Marks)

QUESTION FIVE

- (a) Explain role played by pointer in memory management, how is this achieved?
- (b) Write a program using reference variables as arguments to swap the values of a pair of integers.
(7 Marks)
- (c) Briefly explain how virtual function achieves run time polymorphism.
(8 Marks)