



KENYA METHODIST UNIVERSITY

END OF 1ST TRIMESTER 2010 EXAMINATIONS

FACULTY	:	COMPUTING AND INFORMATICS
DEPARTMENT	:	COMPUTER INFORMATION SYSTEMS
UNIT CODE	:	DBIT 113
UNIT TITLE	:	OBJECT ORIENTED PROGRAMMING CONCEPTS
TIME	:	2 HOURS

Instructions:

- Answer question 1 and any other 2 questions.

SECTION A (30 MARKS)

Question 1

- Describe the three pillars of OOP. (6 mks)
- Using the scanner object, write a Java program to get input from a dialogue box. (6 mks)
- Write four different Java statements that each add 1 to an Integer variable x. (4 mks)
(6 mks)
- Distinguish between a method and constructor in Java. (4 mks)
- Describe three access control specifiers in Java. (6 mks)
- What is the importance of abstract classes? (2 mks)
- List two types of exceptions that can occur in a Java program. (2 mks)

SECTION B (20 MARKS)

Question 2 (15 marks)

- Describe two methods of creating threads in a Java program. (4 mks)
- Distinguish between method overriding and method overloading. (4 mks)
- Write a Java program that sorts in ascending order an array of ten integer values.
(7 mks)

Question 3 (15 marks)

- What is a package? What is its importance in Java? (3 mks)
- Design a class named "person" and its two subclasses named "student" and "employee". Make "faculty" and "staff" subclasses of employee. A person has a name, address, phone number and an email address. A student has a class status (freshman, sophomore, junior, or senior). Define the status as a constant. An employee has a salary, office and date-hired.

Define a class MyDate that contains the fields year, month and day. A faculty member has office hours and a rank. A staff member has a title. Override the testing method in each class to display the class name and person's name. Implement the classes. Write a test program that creates a Person, Student, Employee, Faculty and Staff and invokes their testing () methods. (12 mks)

Question 4 (15 marks)

- i) Using a recursive function, write a program in Java to compute the factorial of a number. (7 mks)
- ii) Give the syntax of the following control structures;
 - a) For loop
 - b) Switch statement
 - c) Do while loop (6 mks)
- iii) What is an interface? Give its syntax. (2 mks)