THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)
(A Centre of Excellence)
Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE IN
ELECTRICAL ENGINEERING (BSC. EEE)

SMA 2276: COMPUTER PROGRAMMING II

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: OCTOBER 2012
TIME: 2 HOURS

<u>**Instructions to Candidates:**</u>
You should have the following for this examination
- *Answer Booklet*

This paper consist of **FIVE** questions
Answer question **ONE** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

<u>**SECTION A (COMPULSORY)**</u>

Question One (20 marks)

Write a program that records students' exam marks. Every student who scores more than 50% has passed the exam. You will need to arrays to record the students' names, their marks and whether they have passed. The department has also asked that you calculate the total number who have passed, the average mark and identify the person with the top mark. Write a program called WHICH processes results for 5 students and produces output similar to the following:

Student	Otieno	Mwangi	Mutiso	Hassan	Asila
Marks	64	57	41	71	37
Pass:	P	P			
No. of pass = 3					

Average Marks = 55.6

Price Awarded to Hassan

SECTION B (Answer Any Two Questions)

Question Two (20 marks)

Write a program that requests a two 2 x 2 integer matrices from the keyboard and then multiplies them. **(20 marks)**

Question Three (20 marks)

a) Explain the meaning of the following Fortran keywords:
    i) Integer
    ii) Write
    iii) Real
    iv) Implicit
    v) Format   **(10 marks)**

b) Write a program called money f90 that calculates the value of $2000 investment after five years for interest rates of 12%, 14%, 16% and 18% and writes the interest rates and results neatly on the screen. (Use simple interest method) **(10 marks)**

Question Four (20 marks)

a) Explain the meaning of the following terms in Fortran:
    i) Intrinsic function
    ii) Double precision
    iii) Redirected output
    iv) Data type
    v) Complex   **(10 marks)**

b) Write a program called trig.f90 that prompts for an angle in radians from the keyboard and then prints out neatly using format statement on the screen the sine, cosine and tangent of the angle.
    (10 marks)

Question Five (20 marks)

a) Write the syntax of the following Fortran keywords:
    i) Open
    ii) Write
    iii) Stop
    iv) Close
    v) Format   **(10 marks)**

b) Write a program called EXCHANGE.+90 that accepts amf amount in shillings and converts in equivalents of dollar, pound and euro using rates given by the user. The program should print the results on the screen neatly.