TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING

DIPLOMA IN ELECTRICAL POWER ENGINEERING (DEPE 5)

EEE 2307: ENGINEERING SOFTWARE DEVELOPMENT & APPLICATION II

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2014
TIME: 2 HOURS

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

This paper consists of **FIVE** questions. Answer any **THREE** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One

Write a C program to convert temperature Fahrenheit to celsium using the formula:

$$C = \left(5.0 \diagup 9.0\right) * (F - 32)$$

The lowest Fahrenheit conversion temperature is 0 and highest is 300. There is a step of 20 between every two conversion values. The output should be in two columns with their column headers.

(20 marks)

Question Two

Write a C program for the following quadratic formula:

$$X = -b \pm \frac{\sqrt{b^2 - 4ac}}{2a}$$

(20 marks)

Question Three

a) List any FIVE characteristics of C programming language. **(5 marks)**

b) Describe the FOUR stages of developing a C program. **(8 marks)**

c) Write a C program that finds factorial of numbers **(7 marks)**

Question Four

a) Describe the function of any FIVE C data types. **(10 marks)**

b) Using suitable variable declaration write a C program that outputs the following:

(i) Sum of two numbers
(ii) Product of the two numbers
(iii) Quotient of the two numbers
(iv) Difference of the two numbers
(v) Modulllo of the two numbers **(10 marks)**

Question Five

a) Write a FOR-loop C program that prints numbers 1 to 100 on the screen. **(5 marks)**

b) Write a C program to calculate the voltage of an electrical appliance **(3 marks)**

c) Describe the function of any FIVE C operators **(5 marks)**

d) Develop a VB hardware software interfaced application using the 25-pin DB parallel connector that can be used to regulate temperatures in a room write codes for the operation of the heating and cooling appliances. Use hexadecimal to identify and code the ports used. **(7 marks)**