



TECHNICAL UNIVERISTRY OF MOMBASA

# Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN MARINE ENGINEERING (DME)

**DMR 2206: ICT III**

END OF SEMESTER EXAMINATION

**SERIES: APRIL 2015**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions.

Attempt question **ONE (Compulsory)** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

### Question One (Compulsory)

With the help of a tree diagram, discuss the software family giving examples, functions and types. **(20 marks)**

### Question Two

- a) Describe the structure of a C++ program **(5 marks)**
- b) Write a C++ program that would compute the following output:  
10, 9, 8, 7, 6, 5, 4, 3, 2, 1, FIRE! **(10 marks)**
- c) Define each of the following terms giving examples:  
(i) Variable  
(ii) Statement  
(iii) Operators  
(iv) Identifiers  
(v) Comments **(5 marks)**

### Question Three

Write short notes giving the features, applications and benefits of each of the following software application product in the field of marine engineering.

- (i) Microsoft project 2010 **(5 marks)**  
(ii) AUTOCAD 2010 **(5 marks)**  
(iii) Microsoft Visio 2010 **(5 marks)**  
(iv) C++ **(5 marks)**

### Question Four

- a) Write a matlab command that would output the following:  
(i) 0 2 4 6 8 **(2 marks)**
- (ii) 
$$\begin{pmatrix} 1 & 2 & 3 \\ 2 & 4 & 5 \\ 3 & 7 & 8 \end{pmatrix}$$
 **(2 marks)**
- b) Write a matlab command that would display a similar graph as illustrated below: **(6 marks)**

c) Describe any FIVE benefits of matlab to the marine engineers **(10 marks)**

**Question Five**

Discuss preventive maintenance under each of the following heading:

- (i) Dust and heat buildup **(5 marks)**
- (ii) Corrosion **(5 marks)**
- (iii) Power line noise **(5 marks)**
- (iv) Electromagnetic/Radio frequency interference **(5 marks)**