TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERNG

EMG 2516 : INDUSTRIAL MANAGEMENT

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: Pick Date May 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

(a) State at least **six** requirements for an organization to be ISO 9001 certified. **(6 marks)**

(b) Briefly describe the Modern Trends in Industrial Management. **(3 marks)**

(c) Give a brief account of what scientific management involves. **(3 marks)**

(d) Explain the principle of the Ishikawa diagram with help of a generic diagram**. (6 marks)**

(e) Briefly Explain any **Three** factors affecting productivity **(6marks)**

(f) Table 1. shows five machines A, B, C, D, and E which are to be used to produce 6 parts, part number 1,2,3,4,5,and 6.

Table 1.

	Part number					
Machines	1	2	3	4	5	6
A			X		X	
B		X	X			
C	X			X		
D		X	X			
E	X			X		X

Use the Rank Order Clustering method to arrange the machines into cells and part families. **(6marks)**

Question TWO

(a) Explain **five** criteria used to define quality**.** **(10 marks)**

(b) Briefly explain Juran's Quality Trilogy for successful Total Quality Management. **(5marks)**

(c) Briefly outline the implementation processes for an organization to obtain ISO 9001 certification. **(5marks)**

Question THREE

(a**)** Compare the following basic types of facility layouts

Product layout

Process layout **(8marks)**

(b) An assembly line operates 450 minutes per day with a desired daily output of 360 units. Table 2 contains information on this product's task times and precedence relationships.

Table 2.

Task	Task time (s)	Immediate predecessor
A	35	_
B	40	A
C	35	A
D	40	B

E	20	C
F	70	C
G	45	E,F
H	30	D,G

i) Draw the precedence diagram,

ii) Determine the work station cycle time

iii) Balance this line using the largest number of following tasks and the longest task time as a secondary criterion.

iv) Determine the efficiency. **(12 marks)**

Question FOUR

(a) Explain any **three** critical skills that a manager must possess. **(6marks)**

(b) Explain the methods used in work study as a scientific management technique **(8marks)**

(c) Discuss scientific management from the workers point of view. **(6marks)**

Question FIVE

(a) Define productivity **(1 mark)**

(b) Briefly explain the effects of the following in productivity;

(i) Material handling,

(ii) Working conditions,

(iii) Improving the existing method of plant operation,

(iv) Plant layout, **(8marks)**

(c) State five aims of materials management. **(5 marks)**

(d) Explain the functions of inventory control with respect to the following:

(i) Raw materials

(ii) Work in progress **(6marks)**