NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF INDUSTRIAL TECHNOLOGY

DEPARTMENT OF INDUSTRIAL & MANUFACTURING ENGINEERING

Workshop Technology 1 - TIE 1103

1st SEMESTER EXAMINATIONS APRIL 2009

Instructions to Candidates

Time Allowed : 3 hours

1. Answer Five Questions only

All questions carry 20 marks each 2.

Question 1

List any five items of safety equipment to be found in an Industrial Engineering workshop. [5] Briefly explain how four of these are used. [15]

Question 2

Communication is a vital aspect of safety in a working engineering environment. Identify and list five any such items each of safety communication and explain what these mean and where they [20]

would best be used.

Ouestion 3

i.

ii.

Explain the following measuring terms:

a)	Precision	[2]
b)	Accuracy	[2]
c)	Reliability	[2]
d)	Repeatability	[2]
Give	two examples each to show their importance in engineering operations.	[12]

Question 4

Explain clearly the following mechanical properties,

i.	a)	Hardness	[2]
	b)	Toughness	[2]
	c)	Ductility	[2]
	d)	Elasticity	[2]
ii)	Give	2 examples each of workshop tools for numbers i.a) and b) above.	[4]
iii)	Brief	ly describe 2 examples each of typical engineering applications for	the properties
	of a)	ductility	[4]
	b)	elasticity	[4]

Question 5

Match the following properties with the items of equipment listed below.

EQUIPMENT	PROPERTY
File	[2]
Spring	[5]
Rivet	[3]
Wire	[5]
Hammer Head	[5]

a) malleability, b) ductibility, c) hardness, d) toughness, e)thermal conductivity, f) electrical conductivity

<u>Question 6</u> With the aid of sketches describe how the forces are applied when components are subjected to a

(a)	tensile load.	[2]
(b)	compressive load	[2]
(c)	shear load	[2]
(d)	impact load	[2]
(e)	Give 2 examples each of typical engineering applications	[12]

End of Exam