

# NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF INDUSTRIAL TECHNOLOGY

DEPARTMENT OF INDUSTRIAL AND MANUFACTURING ENGINEERING

WORKSHOP TECHNOLOGY - TIE 1203

2<sup>ND</sup> SEMESTER EXAMINATIONS

**Instructions to candidates.**

*Time: 3 hours*

Answer any **FIVE** questions.

Question paper is printed on both sides.

All questions carry equal marks

---

**QUESTION 1.**

- a) Define a workshop, in the context of a manufacturing facility. (2 marks)
- b) Give three examples of workshops that may be found at a manufacturing facility of your choice. (3 marks)
- c) Explain the Technology, including Skilled Manpower, that may be found in each of the above workshops. (15 marks)

**QUESTION 2.**

Give five responsibilities that an employer has, under the HSW act, to ensure a safe work environment and good health and welfare for employees. (20 marks)

**QUESTION 3.**

- a) The use of hand tools is physically tiring. Give four reasons why we still have to use hand tools. (10 marks)
- b) What is the difference between hand-powered tools and powered hand-tools? (2 marks)
- c) List four Engineer's files and give their typical uses. (8 marks)

**QUESTION 4.**

- a) What is marking-out and why is it important? (5 marks)
- b) Explain the function of a datum, giving three examples supported by sketches (15 marks)

**QUESTION 5.**

Sketch three types of flame used in oxy-acetylene welding and state their uses.  
(20 marks)

**QUESTION 6.**

Both AC and DC supplies are used arc in electric-arc welding. Give two **advantages** and two **limitations** of each, stating at least one application of each.  
(20 marks)

**QUESTION 7.**

Several work-holding devices can be mounted onto the spindle of a Centre Lathe. Name three of them, giving reasons for their preferred choice.  
(20 marks)

**END OF EXAM**