



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION

DEPARTMENT OF TECHNICAL AND ENGINEERING EDUCATION & TRAINING

WOOD MACHINES AND MAINTENANCE ENGINEERING

PTE 2287

Main Examination

May 2019

This examination paper consists of 3 pages

Time allowed: 3 hours

Total marks: 100

Examiner's name: Eng. A. N. Mnkandla

INSTRUCTIONS

1. Answer any **FIVE** questions.
2. Each question carries **20 marks**.
3. All numbers in brackets represent marks allocated for each question.

QUESTION ONE

- a) Explain what is turning and give any (4) four turning operations carried out by a lathe machine. [10]
- b) Draw and label a single point cutting tool, clearly identifying all the angles. [10]

QUESTION TWO

- (a) Explain the two terms (i). maintenance engineering (ii), maintenance [4]
- (b) State and explain the objectives of maintenance engineering and maintenance. [10]
- (c) What is a maintenance concept? [3]
- (d) Explain what you understand by the term maintenance plan [3]

QUESTION THREE

- (a) Differentiate the following terms
- (i) Corrective Maintenance
 - (ii) Predictive Maintenance
 - (iii) Preventive Maintenance. [6]
- (b) Explain the following terms
- (i) Reliability
 - (ii) Maintainability
 - (iii) Active Repair Time
 - (iv) Mean time to Repair (MTTR)
 - (v) Overhaul
 - (vi) Quality
 - (vii) Inspection.
- [14]

QUESTION FOUR

- (a) What are the performance functions of the maintenance department? [8]
- (b) Give four merits and four drawbacks of Centralised maintenance function [8]

- (a) Explain the difference between Centralised and Decentralised maintenance function [4]

QUESTION FIVE

- (a) What are the major components of Reliability Centred Maintenance? [8]
(b) Discuss in detail the following terms
(i) Proactive maintenance (ii) Reactive maintenance. [4]
(c) What are the functions of lubricants on rotating shafts and bearings? [3]
(d) State the five important purposes of inventory [6]

QUESTION SIX

- (a) Discuss five elements of Preventive Maintenance. [5]
(b) Explain why paint is applied on (i) wooden doors (ii) steel posts (iii) fence
(iv) building wall (v) window seal patty? [5]
(c) Define maintenance quality assurance [3]
(d) Explain the following
(i) ABC Classification Approach [5]
(ii) Maintenance Cost. [2]

QUESTION SEVEN

- (a) List any ten (10) types of construction material? [10]
(b) Explain what is a Construction law? Name three laws which governs construction process. [10]

END OF EXAMINATION