



ELIZADE UNIVERSITY, ILARA-MOKIN,  
ONDO STATE, NIGERIA  
DEPARTMENT OF MECHANICAL ENGINEERING

SECOND SEMESTER EXAMINATIONS

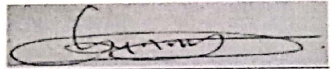
2017/2018 ACADEMIC SESSION

COURSE: MEE 306 – Workshop Practice (2 Units)

CLASS: 300 Level General Engineering

TIME ALLOWED: 2 Hours

INSTRUCTIONS: Answer Question 1 and any other Two (2) Questions

  
HOD'S SIGNATURE

Date: July/August, 2018

**Question 1**

- With the aid of a well labelled diagram(s), describe steps involved in Hardening of Steel.
- Write a part program to step turn a 250mm mild steel bar on a CNC machine showing preparatory and miscellaneous function codes for feed rate selection, coolant usage, spindle speed selection e.t.c using Table 1., (Take Ref pts as X-15.2 Z-105.5)
- Select an appropriate tool for exercise in 1b above and explain/justify your reason for this selection.

Table 1: Machining Parameters

RUN	SPEED (rpm)	FEEDRATE (mm/rev)	DEPTH OF CUT (mm)	Machined Distance (mm)
1	1000	50	0.3	120
2	1000	60	0.6	80

(15 marks)

**QUESTION TWO**

- List and explain 3 preparatory and miscellaneous codes each, used in a CNC lathe machine.
- List and Explain 3 categories of cutting fluids.
- Explain briefly 3 major functions of cutting fluids in machining.

(15 marks)

### QUESTION THREE

- a. During a wood work exercise, a Vernier caliper was used to measure a cylindrical rod as shown in Figure 3 below. Interpret the reading shown on the diagram below and explain your readings.

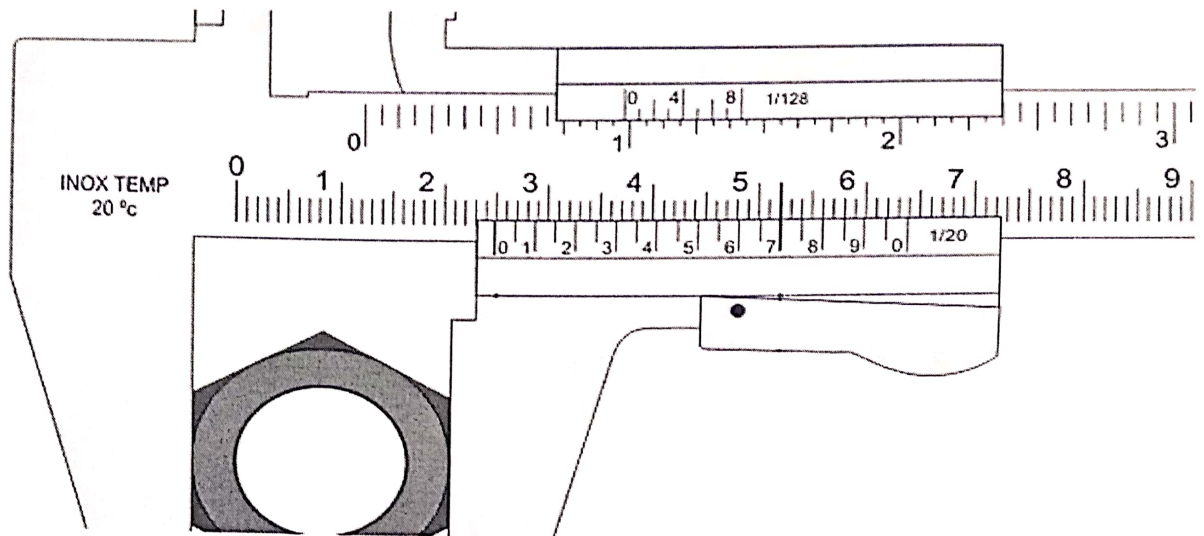


Figure 3

- b. In a tabular form, identify 5 differences between NC and CNC machines.  
c. List and discuss briefly Four (4) types of engineering materials available.

(15 marks)

### QUESTION FOUR

- a. Write a short note on "Foundry work".  
b. List and describe 3 types of quenching media used in heat treatment of metals.  
c. List and discuss briefly 3 types of cutting tools used for machining.

(15 marks)