

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION
FEDERAL UNIVERSITY OF TECHNOLOGY MINNA
FIRST SEMESTER EXAMINATION 2022/2023

COURSE CODE: MWT 312

COURSE TITLE: MACHINE SHOP PRACTICE 1

TIME: 2HRS 45MINS

INSTRUCTIONS: ATTEMPT QUESTION ONE (1) AND ANY OTHER THREE (3)

1a. Fig 1 below is a component to be machined on the lathe in the machine shop. Draw the component to any scale of your choice.

1b. prepare a comprehensive operational sequence to be followed in its production.

1c. outline safety precautions to be observed while machining the component to ensure precision and accuracy.

2a. Sketch and write detailed notes on the following

(i) Cross section a tail stock, (ii) lathe bed, (iii) lathe centers, (iv) steadies, (v) chucks

2b. list five (5) essential requirements of a standard lathe and discuss each succinctly.

3a. differentiate between sensitive, pillar and radial drilling machine

3b. draw a parallel shank drill and label the parts

3c. list ten (10) essential hints that facilitates the effective drilling exercise

4a. with the aid of sketch and clear explanation, show how a taper shank drill is ejected from the spindle of pillar drilling

4b. identify five (5) twist drill faults, causes and remedies

4c. discuss briefly safety precautions that can facilitate effective drilling

5a. write short notes on the following

(i) gang and straddle milling (ii) up cut and down cut milling (iii) cutter classification (iv) work holding devices (v) arbor and arbor support bracket

6a. write short notes on the following:

(i) grinding wheel (ii) abrasive (iii) bond (iv) grit and grade (v) wheel structure

6b. with the aid of sketch, draw the following and label them

(i) edges of abrasive grains ejecting from face of the wheel (ii) an already mounted grinding wheel.

