

**FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DEPARTMENT OF INDUSTRIAL & TECHNOLOGY EDUCATION,
FIRST SEMESTER EXAMINATION 2019/2020.**

Course Title : Machine Shop Practice 1

Course Code : ITE 372

Time Allowed : 2hrs 15mins

Instructions : Attempt Only Four Questions

Question 1

- 1a. Draw a cross sectional view of a lathe tail stock, label the parts and explain its main functions.
- 1b. list five major parts of a lathe machine and the functions of each part listed
- 1c. Sketch five major operations that can be performed on the lathe machine

QUESTION 2

2a write detail notes on the following lathe accessories

(i) Lathe chucks (ii) Centers (iii) Steadies (iv) Driving plate & Face plate (v) Tool holders.
(Support your notes with sketches)

2b. Discuss comprehensively the concept of safety precaution in the machine shop (dressing, power tools, machines)

Question 3

3a. Differentiate between pillar, Radial and multi spindle drilling machines.

3b. Show with the aid of sketch how a tapered shank drill is ejected from the machine

3c. Identify five drill faults, causes and remedies

Question 4

4a. Differentiate between horizontal and vertical milling machine

4b. Explain the following, (i) up cut milling (ii) down cut milling (iii) gang milling (iv). straddle milling (v) arbor and arbor support brackets

Question 5

5a. Sketch the quick return mechanism of a shaping machine mechanism and explain how it functions to give the correct length of stroke and speed.

5b. with the aid of sketch draw a parallel twist drill and label the parts

Question. 6

6a. Show with the aid of sketch how a long cylindrical job is mounted between centers on the lathe. Label your sketch.

6b. List all the tools and equipment required for effective machining operations

6c. Discuss all the necessary safety precautions to be observed while machining