

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF TECHNOLOGY EDUCATION
DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION
FIRST SEMESTER EXAMINATION, 2012/2013 SESSION

COURSE CODE: MWT 312

COURSE TITLE: MACHINE SHOP PRACTICE I

TIME ALLOWED: 2 HRS 45 MINUTES

INSTRUCTION: ATTEMPT QUESTION (1) AND ANY OTHER (3)

QUESTION ONE:

- 1(a). Fig 1 is a component to be machined on the lathe in the machine shop. Draw the same component to any scale of your choice; write a comprehensive operational sequence for its production.
 1(b) outlines safety precautions to be observed while producing the components.

QUESTION TWO:

- 2(a) Discuss comprehensively safety precautions in the machine shop
 2(b) write detail note on the following and sketches where possible:
 i. Tailstock, ii. Lathe centers, iii. Lathe chuck, IV. Lathe steadies, v. Lathe beds

QUESTION THREE

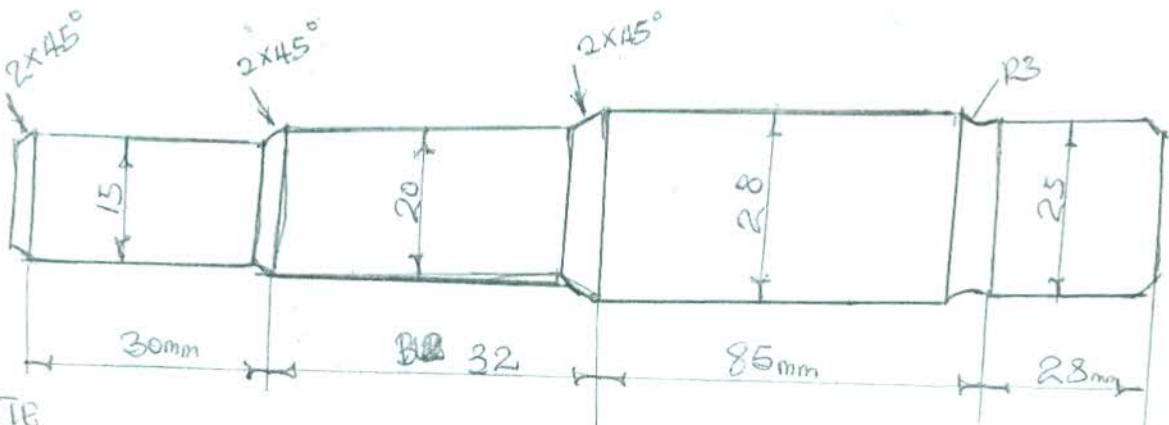
- 3(a) Differentiate between sensitive, pillar and radial drilling machine and state their advantages and disadvantages.
 3(b) with the aid of a sketch, draw a tapered shank drill and labeled the parts
 3(c) Identify five twist drill faults, causes and remedy.

QUESTION FOUR

- 4(a) with the aid of sketch draw the driving mechanism of a shaping machine labeled the parts and explains how length of strokes is obtained.
 4(b) shows with the aid of diagram the table feed mechanism of shaping machine, label its parts and explain in details how it functions
 4(c) write short note on the following:
 (I) the ram (ii) Clapper box (iii). Tool feed hand control (IV) tool post (v) shaping tool

QUESTION FIVE

- 5(a) what are the essential differences between a vertical and horizontal milling machine
 5(b) write short note on the following:
 i. milling cutting tools
 ii. up cut and down cutting milling
 iii. gang and straddle
 iv. arbor and arbor support bracket
 v. causes of bent arbors



*NOTE

All Dimensions are in mm } Supplied Material
 All Radii = R3 } Low Carbon Mild Steel
 All Chamfers = 2x45°