



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
Department of Mechanical & Automotive Engineering
UNIVERSITY EXAMINATION FOR:
BSc. Medical Engineering /BTech Medical Engineering
EME 4150/TMC 4150 : Workshop Technology and Practice I
SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: SEPTEMBER 2018
TIME: 2 HOURS
DATE: Pick Date Sep 2018

Instruction to Candidates:

You should have the following for this examination

- *Answer booklet*
- *Non-Programmable scientific calculator*

This paper consists of **FIVE** questions. Attempt any **THREE** questions.

Maximum marks for each part of a question are as shown.

Do not write on the question paper.

Question ONE

- a) You have been appointed as a safety manager in a glass manufacturing company>the position was created after management realized that a lot of time is lost due to increased safety incidences and accidents .As part of your duties you are required to advice management on duties of employer and employees in regard to safety as stipulated in Occupational Safety and Health act of 2007.Discuss them(20mks)

Question TWO

- i. Describe the working principles of dial gauges and state **TWO** at least two areas where it can be used.(4mks)
- ii. State **TWO** uses of a centre punch when Marking out.(2mks)
- iii. State **THREE** common types of chisels and their respective uses.(6mks)
- iv. Describe the chiseling process (4mks)
- v. State **ONE** Advantages and **TWO** limitations of Sine bar as used in measurements(3mks)
- vi. State at least **ONE** sources of error sin a Sine bar as used in measurements(1mks)

Question THREE

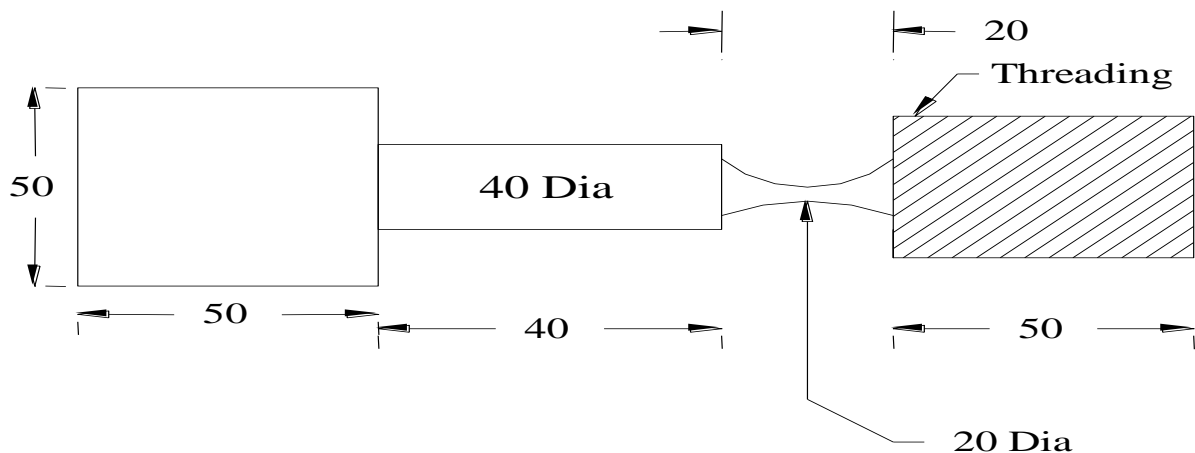
- i. Compare and contrast a turret lathe and a capstan lathe (10mks)
- ii. With an aid of a sketch name the principal parts of a sensitive drilling machine. (4mks)
- iii. Name at least **FOUR** parts of a milling machine (4mks)
- iv. Name **TWO** types of chuck used in lathe machine.(2mks)

Question FOUR

- i. Using a tabular format clear differentiate welding, brazing and soldering (6mks)
- ii. State at least **TWO** materials that can be used to make riverts and state where they can be used /advantages (4mks)
- iii. List at least **THREE** types of rivets and explain where each can be applied. (6mks)
- iv. State **TWO** advantages and **TWO** limitations of Resistance Spot Welding (4mks)

Question FIVE

- i. Give **TWO** reasons why goggles must be worn when gas welding.(2mks)
- ii. Write the process sequence to be used for manufacturing the component(4mks)



- iii. State **TWO** safety precaution while carrying out drilling operations (2mks)
- iv. Why are lap joints preferred to butt joints in welding (1mks)
- v. When would a vee block be used during a marking out operation?(1mks)
- vi. How are shaper classified.(4mks)
- vii. Thread cutting taps are supplied in sets of three. Name each tap and state where each would be used.(6mks)

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Happy Holidays