



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR DIPLOMA IN

MECHANICAL ENGINEERING

WORKSHOP PROCESSES & PRACTICE II

DATE: 5/6/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

This paper consists of two sections. Section A is compulsory, and then answer any other two questions from section B

SECTION A: COMPULSORY.

1. a) Define the term drilling (3 marks)
 - i. State FOUR safety precaution to be observed when working on a drilling machine (8 marks)
 - ii. With aid of a sketch , explain how the drive is transmitted in the drill bit on a pedestal drilling machine (9 marks)
- b) List Four areas of application of sheet metal work (2 marks)
- c) Describe the following sheet metal operation;
 - i. Cleaning (2 marks)
 - ii. Laying (2 marks)
 - iii. Cutting and shearing (2 marks)
 - iv. Soft soldering (2 marks)

SECTION B: ANSWER ANY TWO QUESTIONS

2. a) Explain Three factors to consider when choosing work holding method to be used when working on a drilling machine. (6 marks)
- b) Using a sketch, show how clamping plates can be used as a work holding method on drilling machine (5 marks)
- c) Using a sketch, explain the following operations carried out on the drilling machine;
- i. Counte Boring (3 marks)
 - ii. Spot Facing (3 marks)
 - iii. Counter sinking (3 marks)
3. a) Define the term grinding (2 marks)
- b) Explain the following elements of the grinding wheel giving an example of each;
- i. Abrasives (4 marks)
 - ii. Bond (4 marks)
- c) Explain the following grinding faults stating their causes;
- i. Loading (5 marks)
 - ii. Glazing (5 marks)
4. a) Explain the following grinding fault remedies;
- i. Wheel truing (5 marks)
 - ii. Wheel dressing (5 marks)
- b) Explain four elements to be stated when specifying grinding wheel (4 marks)
- c) Explain the procedure to be followed when mounting a new grinding wheel on a machine (6 marks)
5. a) Name two types of power saws (4 marks)
- b) Explain the driving mechanism of the power saw (7 marks)
- c) Explain the use of the following power saw parts;
- i. The base (3 marks)
 - ii. The ram (3 marks)
 - iii. Blade frame (3 marks)