



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

SECOND SEMESTER EXAMINATION FOR DIPLOMA IN MECHANICAL ENGINEERING

MED-PR 105: WORKSHOP PROCESSES II

DATE: 1/8/2016

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) Describe the “self-sharpening” action of a grinding wheel. (3 marks)
 - b) Define the following terms as applied to grinding wheel
 - i) Abrasive
 - ii) Grain size
 - iii) Grade
 - iv) Structure
 - v) Bond (5 marks)
 - c) A grinding wheel is designated as 25c60Lv. State the meaning of each symbol. (4 marks)
 - d) Describe the following terms as applied to grinding.
 - i. Wheel glazing
 - ii. Wheel dressing
 - iii. Wheel loading
 - iv. Wheel truing (16 marks)

- e) Outline any four advantages of grinding (2 marks)

SECTION B: ANSWER ANY TWO QUESTIONS

2. a) List four areas of application of sheet metal work. (2 marks)
- b) Discuss any THREE metals used in sheet metal work. (6 marks)
- c) Sketch and briefly describe the functions of the following tools as used in sheet metal work.
- i) Scriber
 - ii) Steel rule
 - iii) Dot punch
 - iv) Straight snip
 - v) Chisel
 - vi) Ball pein hammer (12 marks)
3. a) Describe the following sheet metal operations
- i) Measuring and marking
 - ii) Cleaning
 - iii) Laying out
 - iv) Cutting and shearing
 - v) Soft Soldering (10 marks)
- b) List and explain the functions of any five major parts of a pillar drilling machine. (10 marks)
4. a) Differentiate between the following drilling operations using sketches
- i) Boring and Reaming
 - ii) Counter sinking and counter boring (12 marks)
- b) Using clear sketches describe the procedure of making a grooved joint (8 marks)
5. a) Draw and label the power saw. (9 marks)
- b) State any five safety precautions to be observed while using a power saw (5 marks)
- c) Discuss three types of power saws (6 marks)