



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

SECOND YEAR FIRST SEMESTER EXAMINATION FOR DIPLOMA IN MECHANICAL ENGINEERING

MED-PR 201: WORKSHOP PROCESSES & PRACTICE III

DATE: 6/6/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

Answer Question One and Any Other Two Questions

You require drawing instruments for this examination.

1.
 - a) Explain how an engine lathe is specified (3 marks)
 - b) State THREE methods of checking the alignment of lathe centers (6 marks)
 - c) Outline six types of work that can be produced on a vertical milling machine (6 marks)
 - d) Describe the procedure for mounting the milling cutter for horizontal milling (10 marks)
 - e) State five reasons which make casting a preferred method of manufacturing (5 marks)
2.
 - a) With the aid of a sketch show the construction and parts of an indexing mechanism for simple indexing of milling operation. (12 marks)
 - b) Describe the procedure for milling a hexagon whose distance across flat is 40mm on a 50mm diameter shaft. (8 marks)

3.
 - a) Sketch and label a mould ready for pouring in a sand casting process (12 marks)
 - b) List four basic steps necessary in a sand mould making (4 marks)
 - c) State the disadvantages of casting processes (4 marks)
4.
 - a) Explain how the following are achieved in the shaping machine
 - i. Quick return mechanism
 - ii. Adjusting the length of the stroke (10 marks)
 - b) State four safety precautions to be observed when working on a shaper (10 marks)
5.
 - a) List four methods of taper turning on the lathe (4 marks)
 - b) With the aid of a sketch show the essential features of the taper turning attachment set up (10 marks)
 - c) Explain the following with regard to a center lathe
 - i. Swing
 - ii. Gap bed (6 marks)