



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

FIRST SEMESTER EXAMINATION FOR DIPLOMA MECHANICAL ENGINEERING

MED – PR 306:PRODUCTION TECHNOLOGY III

DATE: 8/8/2016

TIME: 8:30 – 10:30 AM

INSTRUCTIONS:

This Examination contains two sections A and B

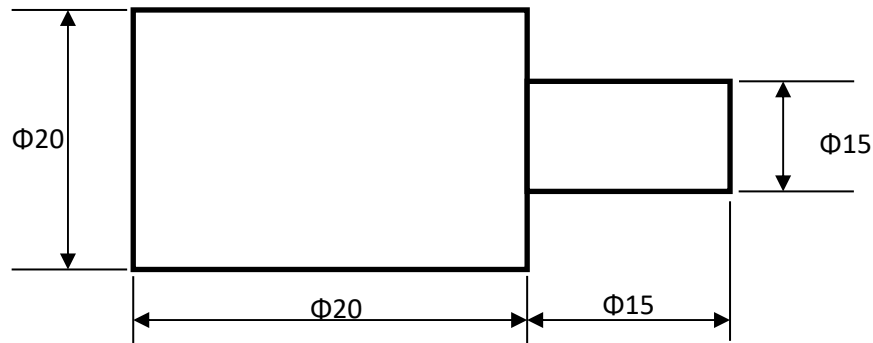
- Section A is compulsory
- Attempt any two other questions from Section B

SECTION A (COMPULSORY) 30 MARKS

1. a) Define the following terms as applied to automation
 - i. Monitor
 - ii. Assembler
 - iii. De bugger
 - iv. Utility

(10 marks)
- b) Describe the stages of programme development in computer aided manufacturing (CAM).

(10 marks)
- c) From a shaft 25mm diameter, make a stepped shaft with dimensions as shown in the figure below. (take speed = 3000rpm and feed = 30mm/min) (10 marks)



SECTION B: ANSWER ANY TWO QUESTIONS FROM THIS SECTION

2. With the aid of diagrams explain the following as applied to classification of NC machines.
 - (a) Point – to – point NC (7 marks)
 - (b) Straight cut/axial cut NC (7 marks)
 - (c) Contour cutting NC/continuous path NC (6 marks)
3.
 - (a) Explain the drawbacks of NC machines (6 marks)
 - (b) Compare and contrast ordinary and NC machine tools (14 marks)
4. Explain the FIVE basic features of CNC system. (20 marks)
5.
 - (a) Explain the advantages of NC system and disadvantages of NC technology over conventional machines. (10 marks)
 - (b) With the aid of diagrams explain the following coordinate systems;
 - (i) Absolute coordinate system fixed origin
 - (ii) Incremental coordinate system (10 marks)