



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 IN
MECHANICAL ENGINEERING

MED-PR 206: PRODUCTION TECHNOLOGY I

DATE: 10/8/2016

TIME: 2:00 – 4:00 PM

INSTRUCTIONS

- This Examination Contains Two sections A and B.
- Section A is compulsory
- Attempt any other Two questions from section B.

Section A (compulsory) - 30 marks.

1. a) Describe briefly the metal cutting process (3 marks)
- b) Describe the following types of chips.
 - i) Segmental chips (3 marks)
 - ii) Continuous chips (3 marks)
 - iii) Continuous chips with built up edge. (4 marks)
- c) With the aid of sketches describe the following methods of metal cutting
 - (i) Orthogonal cutting (6 marks)
 - (ii) Oblique cutting (6 marks)
- d) State any **five** functions of cutting fluids in metal cutting operations. (5 marks)

SECTION B (ATTEMPT ANY TWO QUESTIONS FROM THIS SECTION)

2. a) State any **four** properties of plastics (2 marks)
- b) Differentiate between thermoplastics and thermosetting plastics. (3 marks)
- c) Describe the functions of the following additives to plastics
- i) Lubricants
- ii) Flame retardants
- iii) Plasticizers (6 marks)
- d) Describe the following plastics giving one property and one application for each
- i) Polyethylene (3 marks)
- ii) polytetrafluoroethylene (3 marks)
- iii) Perspex (3 marks)
3. a) List the three stages which moulding processes of plastics undergo. (3 marks)
- b) With the aid of sketches explain the following methods of forming plastics
- (i) Compression moulding (8 marks)
- (ii) Injection moulding (9 marks)
4. a) Define hot working process on metals (3 marks)
- b) Describe the following hot working processes with the aid of a sketch.
- (i) Hot rolling (8 marks)
- (ii) Hot extrusion (9 marks)
5. a) Describe the following methods of hot forging
- i) Drop forging (4 marks)
- ii) Press forging (5 marks)
- b) Describe cold working process and giving one advantage and one limitation. (5 marks)
- c) With the aid of a sketch describe wire drawing process. (6 marks)