



MACHAKOS UNIVERSITY

University Examinations 2017/2018

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

THIRD YEAR SECOND SEMESTER EXAMINATION FOR DIPLOMA IN MECHANICAL ENGINEERING (PRODUCTION OPTION)

MED – PR313: PRODUCTION TECHNOLOGY IV

DATE: 18/12/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

This paper consists of *FIVE* questions

Answer question *ONE* (compulsory) and any other *TWO* questions

1. a) Define the following terms (12 marks)
 - i. Production
 - ii. Facilities
 - iii. Manufacturing support systems
 - iv. Automation
 - v. Plant layout
 - vi. Manufacturing systems
- b) Explain the three types of assembly systems (6 marks)
- c) Explain the line balancing problem (4 marks)
- d) State eight reasons for automation (8 marks)
2. a) State five reasons against automation (5 marks)
- b) Explain the three basic types of automated manufacturing systems. (15 marks)
3. a) State any five devices and equipment required in Computer Integrated Manufacturing (5 marks)
- b) Define Flexible Manufacturing Systems (FMS). (3 marks)

- c) Write in full the following Computer-Aided Techniques. (7 marks)
- i CAD
 - ii CAE
 - iii CAM
 - iv CAPP
 - v PPC
 - vi CAQ
 - vii ERP
- d) i Define computer integrated manufacturing (CIM) and explain where it is mostly used (3 marks)
- ii Explain two benefits of CIM? (2 marks)
4. a) i Define Flexible Manufacturing Systems (FMS). (3 marks)
- ii Outline Five features of Flexible Manufacturing Systems (FMS) (5 marks)
- b) Explain the four Manufacturing Support Systems. (8 marks)
5. a) Explain any Two basic types of Manufacturing Industries. (4 marks)
- b) With the aid of diagrams explain the four types of plant layout. (16 marks)