

MACHAKOS UNIVERSITY

University Examinations August 2019 series

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:

TIME: 2 Hours

Instructions

Answer question ONE and any other TWO questions

1. (a) Define the following terms (12 Mks)
 - (i) production
 - (ii) Facilities
 - (iii) Manufacturing support systems
 - (iv) Automation
 - (v) Plant layout
 - (vi) Manufacturing systems

(b) Explain the three types of assembly systems (6Mks)

(c) Explain the line balancing problem (4mks)

(d) State eight reasons for automation (8Mks)
2. (a) State five reasons against automation (5Mks)

(b) Explain the three basic types of automated manufacturing systems (15Mks)
3. (a) State any five devices and equipment required in Computer Integrated Manufacturing (5Mks)

(b) (i) Define Flexible Manufacturing Systems (FMS) (3Mks)

(c) Write in full the following Computer-Aided Techniques (7Mks)

 - (i) CAD
 - (ii) CAE
 - (iii) CAM
 - (iv) CAPP

(v) PPC

(vi) CAQ

(vii) ERP

(c) (i) Define computer integrated manufacturing (CIM) and explain where it is mostly used

(3Mks)

(ii) Explain two benefits of CIM?

(2Mks)

4. (a) (i) Define Flexible Manufacturing Systems (FMS)

(3Mks)

(ii) Outline FOUR elements and FIVE features of Flexible Manufacturing Systems (FMS)

(5Mks)

(b) Explain the FOUR Manufacturing Support Systems

(12Mks)

5. (a) Explain any two basic types of Manufacturing Industries

(4Mks)

(b) With the aid of diagrams explain the four types of plant layout

(16Mks)