



# MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN MECHANICAL ENGINEERING (PRODUCTION OPTION)

**MED-PR 310: PRODUCTION AND MANUFACTURING ECONOMICS**

**DATE: 28/10/2020**

**TIME: 8.30-10.30 AM**

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## INSTRUCTIONS

*Answer Question One and Any Other Two Questions*

### QUESTION ONE (30 MARKS)

- a) Define the following terms in manufacturing economics. (4 marks)
- Manufacturing
  - Economics
- b) Explain breakeven analysis and state any four ways of its application. (6 marks)
- c) With the aid of diagrams explain the following terms;
- Manufacturing (Technological) (5 marks)
  - Manufacturing (Economics) (5 marks)
- d) Define forecasting and state its four uses (6 marks)
- e) Differentiate between qualitative and quantitative forecasting methods and state four general characteristics of forecasts (4 marks)

### QUESTION TWO (20 MARKS)

- a) Explain production planning and control (4 marks)
- b) State any five functions of production planning and control (5 marks)
- c) Identify any five objectives of Production planning and control (5 marks)
- d) Explain the three stages in production planning and control (6 marks)

**QUESTION THREE (20 MARKS)**

- a) Explain “Just In Time” (JIT) operation and identify its seven benefits (10 marks)
- b)
  - i Explain the concept “Do it right first time” (2 marks)
  - ii State two benefits of the theory “Do it right first time” (2 marks)
  - iii Outline six reasons why employees don’t do it right the first time. (6 marks)

**QUESTION FOUR (20 MARKS)**

- a) Differentiate between requirements and constraints as applied to manufacturing. (4 marks)
- b) Identify and explain any three types of manufacturing Constraints (6 marks)
- c) Identify and explain any five types of economic constraints in manufacturing (10 marks)

**QUESTION FIVE (20 MARKS)**

- a) Explain the concept of Cost-benefit analysis (5 marks)
- b)
  - i Explaining the “zero defects” idea in production (3 marks)
  - ii Explain why “Zero defects is NOT about being perfect” (6 marks)
- c) Explain any three forecasting qualitative methods. (6 marks)