MACHAKOS UNIVERSITY

University Examinations for 2023/2024 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

FIFTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (ELECTRICAL AND ELECTRONICS ENGINEERING)

EEE 503: INDUSTRIAL MANAGEMENT

DATE: **TIME:**

INSTRUCTIONS
This paper consists of FIVE Questions.

Answer Question ONE [30 Marks] and any other TWO Questions [20 Marks Each].

Write your University number on the answer sheet.

This paper consists of 3 printed pages

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

QUESTION ONE (COMPULSORY) (30 MARKS)

a. Explain how aforementioned models have been devised as the forecasting tool. **[4Marks]**
   i. Replacement models
   ii. Queuing theory

b. In your own context, show how forecasting techniques are implemented in operations management. [4Marks]

c. Production control is the key element to any organizational structure. In your own context explain eight devised techniques that have necessitate effectiveness of resources optimization **[6 Marks]**

d. The ultimate objective of industrial management is to produce the right quantity of right quality goods at the right time. In your own context show how is it achieved. **[6 Marks]**

e. Find the partial productivity and total productivity for a company X for which the following data is available: Output = ksh 20000, Labor input =Ksh 5000, Materials input = Ksh 4000, Capital input =5000, Energy input = Ksh 2000. Other input expenses= Ksh 900. Assume the above values are in constant Ksh with respect to a base period **[8 Marks]**

f. Show how Frederick W Taylor principle in industrial management sustained the effort of direction and efficiency improvement through his contribution. **[2 Marks]**

g. Enlist six Factors are Contributing to the Complexity of Control in industrial management**. [3 Marks]**

QUESTION TWO [20MARKS]

a) Describe how industrial management principles have historically contributed to the shaping organizational structure. **[10 Marks]**

b) Analyze various component that constitutes to a whole revolution of industrial managements. **[10 Marks]**

QUESTION THREE[20MARKS]

a) Discuss various key elements and factors that are considered during the conceptualization and establishment of industrial sector. [10 Marks]

b) Analyze various technical challenges that have generally affected the performance of most industrial sector in developing countries. **[10 Marks]**

QUESTION FOUR [20MARKS]

a) A good and effective production-control system requires sound organizational structure, reliable information, a relatively high degree of standardization and trained personnel for its success. Discus those factors that have enhanced its success. **[8 Marks]**

b) Motivating employees is a crucial factor in increasing production and enhancing organizational effectiveness. Motivated employees tend to be more engaged, productive, and committed to their work, which ultimately leads to improved performance and outcomes. Analyze various criteria that organizations should consider in motivating such employees. **[12 Marks]**

QUESTION FIVE[20MARKS]

a) Discuss the key roles and functions of production planning and control in manufacturing sector. **[8 Marks]**

b) Describe how the choice of a particular type of forecasting in industrial management will influence the design of the specific objectives, the nature of the data, the industry, and the context of the decision-making process. **[12 Marks]**