2506/301
2507/301
INDUSTRIAL ORGANISATION
AND MANAGEMENT
Oct./Nov. 2022
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AERONAUTICAL ENGINEERING
(AIRFRAMES AND ENGINES OPTION)
(AVIONICS OPTION)

MODULE III

INDUSTRIAL ORGANISATION AND MANAGEMENT

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:
        answer booklet
        a non-programmable electronic calculator.
This paper consists of the EIGHT questions.
Answer any FIVE of the EIGHT questions in the answer booklet provided.
All questions carry equal marks.
Maximum marks for each part of a question are as shown.
Candidates should answer the questions in English.

This paper consists of 4 printed pages.

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

Turn over

1. (a) Describe the concept of 'soldiering' as used in the scientific management theory by F.W Taylor. (4 marks)

   (b) Explain **four** contributions of the scientific management theory to production efficiency in industrial organizations. (8 marks)

   (c) One major function of an office is recording and processing of information. Identify **four** types of formation recorded and processed in an aeronautical engineering maintenance office. (4 marks)

   (d) Outline **four** advantages of the open plan office layout. (4 marks)

2. (a) Differentiate between line authority and staff authority. (4 marks)

   (b) Illustrate each of the following types of organization structures:

      (i) functional;
      (ii) territorial. (8 marks)

   (c) Outline **four** causes of poor outcomes of a delegation process. (4 marks)

   (d) State **four** limitations of making decisions through committees. (4 marks)

3. A large company intends to set up a centralised maintenance department to undertake all its maintenance operations.

   (a) Identify **four** functional sections of the department. (4 marks)

   (b) Outline the steps they should follow when setting up a preventive maintenance plan. (6 marks)

   (c) Explain **three** types of costs associated with maintenance in such a system. (6 marks)

   (d) Highlight **four** advantages of centralizing the department. (4 marks)

4. (a) List **four** principles of purchasing. (4 marks)

   (b) Explain each of the following procurement methods:

      (i) spot purchase;
      (ii) contract. (4 marks)

(c) A company that operates a simple re-order level system has the following data for stock item:

Normal usage --800 units per day
Minimum usage --- 600 units per day
Maximum usage --------------------------------------1500 units per day
Lead time --10-20 days
Previous economic order quantity (EOQ) ----------- 50,000 units.

Calculate each of the following stock levels:

(i) re-order;
(ii) maximum;
(iii) minimum. (6 marks)

(d) (i) Design a suitable bin card for use in a stores department.
(ii) State **two** advantages of Last In Fist Out (LIFO) (6 marks)

5. (a) Outline **four** aspects of production planning. (4 marks)

(b) Explain **four** economic factors that may affect production planning in manufacturing organizations. (8 marks)

(c) State **four** features of job production. (4 marks)

(d) State **four** qualities of a good product design. (4 marks)

6. (a) State **four** techniques used in wok measurement. (2 marks)

(b) A job has three elements A, B and C. The observed times and ratings for each of the elements are given in table 1.

Table 1

Element	Observed time (mins)	Rating
A	3.40	140
B	4.60	90
C	2.50	80

If the total working allowances add up to 3.20 minutes and the total non-working allowances add up to 2.3 minutes, determine its;
(i) Basic time;
(ii) Work content;
(iii) Standard time. (6 marks)

(c)   Explain **three** reasons for studying a machine operator's movements during method study. (6 marks)

(d)   Explain **three** factors that may limit the implementation of work study recommendations in an industry. (6 marks)

7.   (a)   Highlight **five** methods of training employees. (4 marks)

(b)   Describe each o the following tests used during employment interviews:

   (i)   aptitude tests;
   (ii)   proficiency tests;
   (iii)   intelligence tests.
   (6 marks)

(c)   Identify **four** human related weakness experienced by organizations when recruiting staff. (4 marks)

(d)   (i)   Outline the steps involved in the employee appraisal process.
   (ii)   List **three** possible outcomes of an employee appraisal process.
   (6 marks)

8.   (a)   (i)   Explain the term 'wealth' as used in economics.
   (ii)   Explain the way in which each of the following create wealth in an economy:

      I.   firms;
      II.   government.
      (6 marks)

(b)   Explain **four** factors that may affect the demand for a commodity apart from its price. (8 marks)

(c)   (i)   Define the term 'break-even point'.
   (ii)   Explain **two** ways in which break-even analysis is useful to a manager.
   (6 marks)

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