

2506/301
2507/301
INDUSTRIAL ORGANIZATION AND MANAGEMENT
Oct./Nov. 2017
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN AERONAUTICAL ENGINEERING
(AIRFRAMES AND ENGINES OPTION)
(AVIONICS OPTION)

MODULE III

INDUSTRIAL ORGANIZATION AND MANAGEMENT

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Non-programmable scientific calculator;

Drawing instruments.

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 indicated.

Candidates should answer the questions in English.

This paper consists of 4 printed pages.

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

1. (a) Differentiate between formal and informal organizations. (4 marks)
- (b) With the aid of diagrams, illustrate the following types of organisations structures:
- (i) geographically based;
- (ii) product based. (8 marks)
- (c) Explain **four** criticisms levelled against management by objectives as a philosophy of management. (8 marks)
2. (a) Highlight **two** disadvantages of Operations Research (OR) approach to management (4 marks)
- (b) Explain **four** principles of management by Henri Fayol. (8 marks)
- (c) Explain **four** contributions of scientific management to production efficiency in industrial organisations. (8 marks)
3. (a) Explain the following:
- (i) Downtime;
- (ii) Overhaul. (4 marks)
- (b) Identify the **four** types of preventive maintenance. (4 marks)
- (c) (i) Outline the key pre-requisites to planning an effective maintenance programme in an industrial organisation.
- (ii) State **five** advantages of such a system. (8 marks)
- (d) Explain **two** factors that affect the reliability of production plant. (4 marks)
4. (a) Explain the following terms as used in material procurement:
- (i) competitive bidding;
- (ii) speculative buying;
- (iii) product specification;
- (iv) quotation. (8 marks)
- (b) The following data relate to a given stock item:
- Normal usage -----1500 units
- Maximum usage -----2000 units
- Minimum usage -----1000 units
- Lead time -----10 - 20 days
- Economic order quantity -----35,000 units.

Determine

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

(6 marks)

(c) Explain **three** reasons why industrial organisation keep stock of raw materials.

(6 marks)

5. (a) Highlight **four** responsibilities of the despatching section of a production plant.

(4 marks)

(b) Outline the stages of product design and development.

(8 marks)

(c) Explain four limitations of a mass production system.

(8 marks)

6. (a) Highlight **four** principles of method study related to the motion of human body when working.

(4 marks)

(b) State **four** uses of work study data in an industrial organisation.

(4 marks)

(c) Differentiate between relaxation allowance and interference allowance, giving an example in each case.

(4 marks)

(d) The observed time and rating for each element of a job under study are given in table 1.

Element	Observed time (minutes)	Rating
1	2.80	120
2	3.50	90
3	1.90	90

Table 1

(i) Determine the basic time for the job.

(ii) If the total working allowances are 2.20 minutes and non-working allowances are 1.6 minutes, determine the work content and standard time for the job.

(Take standard rating to be 100)

(8 marks)

7. (a) Describe the following methods used by organisations to train their employees:

(i) simulation;

(ii) vestibule;

(iii) apprenticeship.

(9 marks)

(b) Explain the stages of employee selection process used by organisations when hiring new employees.

(7 marks)

- (c) Highlight **four** objectives of carrying out employee performance appraisal. (4 marks)
- 8/ (a) (i) State **four** types of information kept in an office.
(ii) Describe the features of a landscaped office. (6 marks)
- (b) (i) With the aid of examples, differentiate between fixed costs and variable costs.
(ii) A manufacturing company has its fixed costs as Ksh1,800,000 and variable cost per unit of Ksh 80. If the selling price per unit is Ksh 140, determine the:
(I) break-even point in units.
(II) sales revenue at break-even point. (8 marks)
- (c) Explain **three** factors that influence wage levels in a country. (6 marks)

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