

2207/305

INDUSTRIAL ORGANISATION  
AND MANAGEMENT

Oct./Nov. 2018

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**DIPLOMA IN AERONAUTICAL ENGINEERING AVIONICS  
(COMMUNICATION AND NAVIGATION OPTION)**

INDUSTRIAL ORGANISATION AND MANAGEMENT

**3 hours**

**INSTRUCTIONS TO CANDIDATES**

*You should have the following for this examination:*

*Non-programmable scientific calculator;*

*Mathematical table;*

*Answer booklet.*

*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.**


- ✕. (a) Distinguish between the following management levels:
- (i) top management;
  - (ii) line management. (4 marks)
- (b) Explain the following as used in management systems:
- (i) directing;
  - (ii) staffing (8 marks)
- (c) According to Fredrick Herzberg's two factor theory, outline the factors that cause employee dissatisfaction. (4 marks)
- (d) State **four** features of the classical management theories. (4 marks)
- ✕ (a) (i) State any **three** disadvantages of organisational charts.
- (ii) Draw a labelled diagram of the circular organisational chart. (8 marks)
- (b) Outline **four** principles of a good organisation system. (4 marks)
- (c) Explain **four** factors that influence the degree of delegation in an organisation. (8 marks)
3. (a) Explain the **two** components of a cash budget. (4 marks)
- (b) State **five** functions of a finance manager. (5 marks)
- (c) Outline the steps followed in the budgetary control process. (3 marks)
- (d) Explain **four** factors considered when determining the price of a new product. (8 marks)
4. (a) Draw and explain **three** flowchart symbols in work study. *▷ direction of flow* (6 marks)
- (b) Differentiate between relaxation allowance and interference allowance in work measurement. *○ - start or end*  (4 marks)
- (c) State **four** applications of work measurement data in an industrial organisation. (4 marks)
- (d) The observed times and ratings for a job broken into elements are shown in Table 1.

Table 1

Element	Observed Time (minute)	Rating
1	2.80	120
2	4.20	90
3	2.60	85

- (i) Determine the basic time for the job.
- (ii) If the total working allowances are 2.10 minutes and the non-working allowances are 1.50 minutes, determine the work content and standard time for the job at standard rating of 100. (6 marks)

- 5.
- (a) State **four** activities of stock control department in an organisation. (4 marks)
  - (b) Outline **four** reasons that justify the keeping of stock of raw materials by manufacturing organisations. (4 marks)
  - (c) Differentiate between carrying costs and buying costs of materials stating **two** examples in each case. (4 marks)
  - (d) The following data relates to a component to be manufactured:

Annual demand = 1280 units  
 Ordering costs = Ksh 50 per order  
 Carrying costs = Ksh 5 per unit

Determine:

$$EOQ = \sqrt{\frac{2DC_o}{ch}}$$

- (i) Economic Order Quantity;
- (ii) Expected total stock costs to meet annual demand. (8 marks)

- 6.
- (a) State **four** features of a good workshop layout. (4 marks)
  - (b) Outline **four** limitations of a mass production system. (4 marks)
  - (c) **Table 2** shows information relating to an engineering project.

**Table 2**

Activity	Description	Duration(Weeks)	Predecessor
A	Preliminary meeting	1	-
B	Problem formulation	8	A
C	Plant visits	5	B
D	Data collection	14	B
E	Data analysis	10	D
F	Supplementary data	10	C,E
G	Preliminary notes	15	B
H	Model construction	11	C,E
J	Solution	5	H
K	Discussions	3	F,J
L	Device operating rules	6	K
M	Draft report	18	C,E,G
N	Final report	12	L,M

- (i) Construct the project network (7 marks)
- (ii) Identify the critical path and project completion time. (2 marks)
- (iii) Compute the following:
  - (I) Free float for activity C;
  - (II) Total float for activity M. (3 marks)

- 7
- (a) Explain the importance of quality control standards in an organisation. (6 marks)
  - (b) Outline the procedure followed in sampling inspection. (4 marks)
  - (c) State **four** measurement methods commonly used in manufacturing industries when carrying out inspection. (4 marks)
  - (d) A product undergoing a quality control process generated the following data:

Mean Range (R)	=	0.72
Process Mean ( $\bar{X}$ )	=	72.25
Sample size (n)	=	5
Hartley constant (dn)	=	1.64

Compute the action and warning limits. (6 marks)

- 8
- (a) Outline **four** reasons for evaluating and grading jobs before employee recruitment. (4 marks)
  - (b) State **four** benefits of systematic training of personnel. (4 marks)
  - (c)
    - (i) Outline **four** ways of terminating a contract of employment.
    - (ii) Identify **four** causes of summary dismissal. (8 marks)
  - (d) State **four** principles of good remuneration policy (4 marks)

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