

2207/305

**INDUSTRIAL ORGANISATION  
AND MANAGEMENT**

**June/July 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 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 5 printed pages.**

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

1. (a) (i) State **three** features of a budget. (6 marks)
- (ii) Outline the importance of a budget to an organisation. (6 marks)
- (b) Differentiate between short-term and long-term business finances, giving **two** sources in each case. (6 marks)
- (c) (i) List **four** reasons why companies advertise their products. (8 marks)
- (ii) Explain **two** negative effects of advertising to a firm. (8 marks)

2. (a) State **five** key activities of an organisation as described by Henri Fayol. (5 marks)
- (b) Describe 'staffing' as a function of organisation in management. (5 marks)
- (c) Explain:
- (i) the term 'coordination' as used in management. (10 marks)
- (ii) **four** strategies industrial organisations may apply to achieve effective coordination. (10 marks)

3. (a) Explain the following styles of management:
- (i) Laissez faire. (4 marks)
- (ii) Management by objectives. (4 marks)
- (b) Differentiate between authority and responsibility as used in management. (4 marks)
- (c) Highlight **two** advantages and **two** disadvantages of organisational charts. (4 marks)
- (d) A newly established industry intends to set up new departments. Explain **four** factors which should be considered to ensure that the process is effectively done. (8 marks)

4. (a) Outline **four** factors that determine the selection of a factory site location. (4 marks)
- (b) Explain the following activities in production planning and control:
- (i) line balancing; (6 marks)
- (ii) estimating;
- (iii) dispatching.

- (c) Table 1 shows the activities of a small project and their duration in days:

Table 1

Activity	A	B	C	D	E	F	G	H	I
Duration (days)	3	5	5	2	6	7	5	8	7

Activities A, B and C will start simultaneously.

Activity D follows activity A while E follows B.

Activity D and E are followed by G while F is dependent on C.

Activity H depends on D and E while I depends on F and G.

- (i) Draw the project network and determine the critical path and its duration.

- (ii) Determine the free float of the non-critical activities.

(10 marks)

5. (a) (i) Define Total Quality Management (TQM).

- (ii) Highlight **four** customer satisfaction-oriented benefits of Total Quality Management.

(6 marks)

- (b) Describe the following quality control activities during a production cycle:

- (i) Incoming materials quality control.

- (ii) Finished products quality control.

(4 marks)

- (c) Distinguish between inspection based on variables and inspection based on attributes, giving **two** examples in each case.

(4 marks)

- (d) The data below relates to a product which was undergoing a statistical quality control process.

$$\text{Sample size (n)} = 20$$

$$\text{Process mean } (\bar{X}) = 80.4 \text{ mm}$$

$$\text{Mean range } (\bar{R}) = 0.6 \text{ mm}$$

$$\text{Hartley's constant } (d_n) = 1.72$$

Determine the 3-sigma control limits.

(6 marks)

6. (a) Outline **two** reasons for including allowances when conducting work measurement. (2 marks)
- (b) It is common practice for organisations to hire external consultants to undertake work study in their organisations. Explain **four** reasons why workers are usually uncomfortable with such consultants. (8 marks)
- (c) Explain the following time study techniques in work measurement.
- (i) synthetic timing;
  - (ii) analytical estimating.
- (4 marks)
- (d) A welder whose performance rating is 120 is observed several times performing a job over a number of cycles as shown in table 2.

Table 2

No. of times observed	Cycle time in minutes
2	24
3	26
1	20
4	34

Determine the standard time for the job if allowances are set at 10%. (6 marks)

7. (a) Outline **four** functions of inventory control in an industry. (4 marks)
- (b) Describe the following types of inventory control systems:
- (i) Periodic review system.
  - (ii) Re-order level system.
- (4 marks)
- (c) The current trend in materials control systems is to use modern technology such as bar coding or radio frequency identification technology. Highlight **three** benefits of such technology to:
- (i) customers;
  - (ii) manufacturers.
- (6 marks)
- (d) Design a 'materials returned note' suitable for use in a medium sized factory. (6 marks)

8. (a) Outline **four** objectives of manpower planning. (4 marks)
- (b) Differentiate between dismissal and suspension of an employee. (4 marks)
- (c) Explain **three** elements of a remuneration policy. (6 marks)  
*element of work*  
*@ 1300 of work*
- (d) Highlight **six** qualities of a good leader. (6 marks)  
 ① Democratic  
 ② participative leader

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