

2207/305

INDUSTRIAL ORGANIZATION & MANAGEMENT

Oct./Nov. 2009

Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

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

INDUSTRIAL ORGANIZATION & MANAGEMENT

3 hours

**INSTRUCTIONS TO CANDIDATES**

*You should have the following for this examination.*

*Answer booklet*

*Electronic calculator*

*Answer any **FIVE** of the **EIGHT** questions in this paper.*

*All questions carry equal marks*

*Maximum marks for each part of the question are as shown.*

**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) Explain the requirements of the Occupational Safety and Health Act regarding each of the following facilities and equipment:

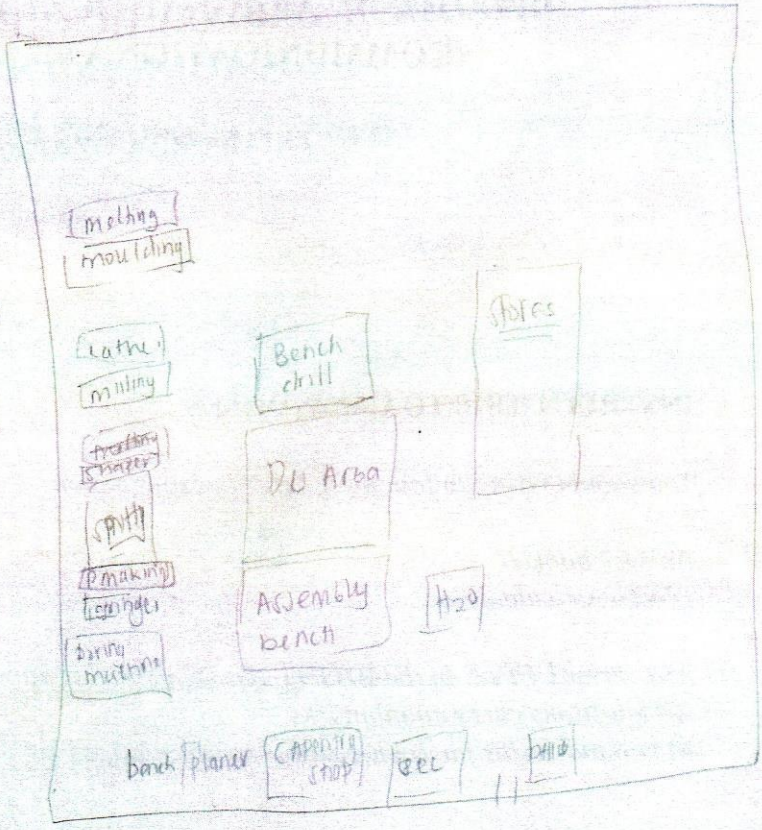
- (i) water services;
- (ii) storage areas;
- (iii) fire protection devices.

*It is required that to - water clean / safe  
 storage areas are safe  
 compatibility with operator - anything that is harmful should health  
 should be stored in the outwards*

(6 marks)

(b) Jacaranda Ltd Company intends to set up a maintenance and repair workshop comprising equipment and facilities listed below:

- (i) stores
- (ii) water point
- (iii) assembly bench
- (iv) bench drill
- (v) moulding shop
- (vi) lathe
- (vii) welding shop
- (viii) pattern making shop
- (ix) shaper
- (x) milling machine
- (xi) space for expansion
- (xii) office
- (xiii) grinder
- (xiv) boring machine
- (xv) disassembly area
- (xvi) bench
- (xvii) security shop
- (xviii) melting shop
- (xix) smithy shop
- (xx) carpentry shop
- (xxi) planer



Draw the workshop layout indicating the location of the equipment and facilities.

(14 marks)

2. (a) State any four functions of the quality control department in an industrial organization.

(4 marks)

(b) Explain the following types of variations in a manufacturing process:

- (i) chance or random variation;
- (ii) assignable cause variation.

(6 marks)



- (c) A series of 20 samples of 4 units gave the following results:
- process mean = 2,500 mm
  - mean range = 100 mm

If the constant factor “dn” for the sample size of 4 units = 2.06; determine the:

- (i) warning limits at 0.025 lines;  
 (ii) action limits at 0.001 lines.

(10 marks)

3. (a) Explain the following terms used in network analysis:

- (i) total float;  
 (ii) slack;  
 (iii) free float.

(3 marks)

- (b) Table 1 shows the relationship between the project activity times in days and the manpower requirement.

- (i) Draw the project network and determine the project duration.  
 (ii) Determine the schedule that minimises the variation in manpower requirements.

Table 1

	Activity	Duration (in days)	Workers required
A	1 - 2	3	2
B	2 - 3	4	2
C	2 - 4	4	4
D	3 - 7	4	6
E	4 - 5	2	2
F	4 - 7	2	4
G	5 - 6	3	2
H	6 - 7	2	2

(17 marks)

4. (a) State any **four** benefits of systematic training of personnel in organisations.

(4 marks)

- (b) Describe the key features of any **three** experiential methods of training used in courses for management development. *- change of dept*  
*- Delegation.*

(9 marks)

- (c) As the chairman of an interviewing panel, outline the methods that can be used to keep the interview under control. *- clearly state your objectives*  
*- Restrict your questions to the objectives*  
*- make the questions easy to understand.*  
*- share the objectives to each member of the panel*  
 3 *make sure there is no overlapping.*  
*- have an order in which they follow each other.*

(7 marks)



5. (a) State any **three** functions of accounting in an organisation. (3 marks)
- (b) Describe the following costs associated with manufacturing:  
 (i) prime costs;  
 (ii) factory costs;  
 (iii) work-in-progress. (6 marks)
- (c) (i) Outline any **four** benefits of budgeting.  
 (ii) (I) Explain the "master budget" of a company.  
 (II) List any **five** of the components of a master budget. (11 marks)
6. (a) Outline the purpose of the following collective bargaining agreement:  
 (i) procedural;  
 (ii) substantive. (6 marks)
- (b) Explain any **three** reasons which compel workers to accept the leadership of an organization. (6 marks)
- (c) With respect to industrial relations, outline the obligations of each of the following parties in employment contracts:  
 (i) managers; *- remunerate - grade - assist -*  
 (ii) employees. *- work - keep standards - deliver results* (8 marks)
7. (a) Explain the term "product benefits" with respect to:  
 (i) quality;  
 (ii) branding;  
 (iii) packaging. (9 marks)
- (b) Outline the characteristics of the following types of inventory control systems:  
 (i) re-order level system;  
 (ii) periodic review system. (4 marks)
- (c) Herderson Company Limited made the following estimates for a component used in manufacturing:  
 - Annual usage = 1,125  
 - Ordering costs = Kshs. 50 per order  
 - Carrying costs per annum = Kshs. 5 per component
- Determine the:  
 (i) Economic Order Quantity;  
 (ii) expected total stock costs. (7 marks)

- 8.
- (a) Outline the steps followed when carrying out time study in work measurements. (7 marks)
- break task to sub task
  - study time taken by each task
  - materials / equipments / resources required to complete it
  - why, when, why this way - alternative ways and means of going it
  - Among the alternative ways / methods which is best and less time consuming for the overall task to be completed.
- (b) Motivation of subordinates is an important aspect of a manager's job. Explain any three methods that a manager can adopt to motivate staff. (9 marks)
- Fair remuneration
  - Training them.
  - Delegation
  - Promotion
  - Communication
  - Welfare.
- (c) Explain "SWOT" analysis as a planning tool. (4 marks)

