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**INDUSTRIAL ORGANIZATION
AND MANAGEMENT**

Oct./Nov. 2017

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN MECHANICAL ENGINEERING

(PRODUCTION OPTION)

(PLANT OPTION)

(FABRICATION TECHNOLOGY AND METALLURGY OPTION)

(MATERIALS TECHNOLOGY AND METALLURGY OPTION)

DIPLOMA AUTOMOTIVE ENGINEERING

DIPLOMA IN CONSTRUCTION PLANT ENGINEERING

DIPLOMA IN AGRICULTURAL ENGINEERING

(FARM POWER AND MACHINERY OPTION)

DIPLOMA IN AERONAUTICAL ENGINEERING

(AIRFRAMES AND ENGINES OPTION)

INDUSTRIAL ORGANIZATION AND MANAGEMENT

3 hours

INSTRUCTIONS TO CANDIDATES

You should have an answer booklet and Non-programmable Scientific calculator/Mathematical Tables for this examination.

*Answer **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 the pages are printed as indicated and that no questions are missing.

1.

- (a) State **four** advantages of centralised stores. (4 marks)
- (b) With an illustration in each case, explain the following documents used in stores:
 - (i) bin card;
 - (ii) stores ledgers.

(6 marks)

- (c) Electric cables have a steady rate of demand of 20,000 per year. Placing an order costs Ksh. 1,200 and it costs Ksh. 12 to hold stock for a year.

- Calculate:
- (i) economic Order Quantity;
 - (ii) number of orders per year.

(5 marks)

- (d) Naco Fish Processors Limited had initial inventory of 100 tonnes which was replenished by a further 100 tonnes continuously over a time period. For the next time, there was no activity, but at time point 2, 100 tonnes were demanded followed over the next two times period by a continuous demand which used up the last 100 tonnes before a further 150 tonnes were delivered. Using the information above, plot a labelled inventory graph.

(5 marks)

- 2. (a) State **four** advantages of Programme Evaluation and Review Technique (PERT) in project management. (4 marks)
- (b) The following schedule represents activities of Bora Construction Company.

Activity	Preceding Activity	Duration (days)
A	-	3
B	-	3
C	-	7
D	A	1
E	DI	2
F	B	2
G	C	1
H	E, F, G	2
I	B	1

- Using the above information:
- (i) draw the network;
 - (ii) identify the critical path;
 - (iii) estimate the critical project duration.

(16 marks)

3. ✓ (a) Outline **four** objectives of production planning in a maintenance workshop. (4 marks)
- (b) Distinguish between the following types of production processes:
 (i) batch;
 (ii) jobbing. (2 marks)
- (c) Explain the systematic approaches to method study. (5 marks)
- (d) A time study of motor vehicle assembling operation yielded the following observed time for which the analyst gave performance rating of 120%.

Observation	Time (minutes)
1	8.40
2	8.30
3	8.16
4	8.24
5	8.30
6	8.36
7	8.28
8	8.28
9	8.38

Using personal allowance of 20% of the job time, determine:

- (i) observed time;
 (ii) normal time;
 (iii) standard time. (9 marks)

4. ✓ (a) Outline **four** benefits of carrying out performance appraisal in a production firm. (4 marks)
- (b) Explain how the following training methods are conducted among employees:
 (i) off-job;
 (ii) role-playing. (4 marks)
- (c) Outline **four** circumstances that may lead to the recruitment of new employees in a manufacturing firm. (4 marks)
- (d) Explain **four** functions of a Human Resource Manager in a company. (8 marks)

5. ✓ (a) Giving an example, distinguish between the following types of goods:
 (i) inferior goods;
 (ii) Giffen goods. (4 marks)
- (b) Outline **four** benefits of opportunity cost concept in decision making in a manufacturing company. (4 marks)
- (c) Explain **three** measures used by the Government to reduce the effects of price mechanism. (6 marks)
- (d) Explain **three** factors that may determine supply of a product. (6 marks)
6. ✗ (a) Describe the Relay Assembly Test room experiment in Hawthorne studies and the conclusions that were drawn. (10 marks)
- (b) Explain **five** principles of management developed by Henri Fayol. (10 marks)
7. (a) State **four** merits of line organizational structure. (4 marks)
- (b) Explain the following terms:
 (i) job enlargement;
 (ii) job enrichment. (4 marks)
- (c) Delegation is an integral process in management. (4 marks)
- (i) State **four** processes of delegation;
 (ii) Explain **four** challenges faced by managers in delegation of duties. (12 marks)
8. ✓ (a) State **three** advantages of centralised maintenance programme. (3 marks)
- (b) Distinguish between the following:
 (i) emergency maintenance;
 (ii) preventive maintenance. (4 marks)
- (c) Outline **five** procedural steps followed when carrying out routine maintenance in an industrial plant. (5 marks)
- (d) Describe **four** functions of maintenance department in an organisation. (8 marks)

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