

2521/303, 2602/301
2601/301, 2603/301
**INDUSTRIAL MANAGEMENT, ESTIMATING,
TENDERING AND ENGINEERING SERVICES
CONTRACTS**
Oct./Nov. 2022
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING
(POWER OPTION)
(TELECOMMUNICATION OPTION)
(INSTRUMENTATION OPTION)
MODULE III**

**INDUSTRIAL MANAGEMENT, ESTIMATING, TENDERING AND
ENGINEERING SERVICES CONTRACTS**

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Drawing instruments;

Non programmable scientific calculator.

*This paper consists of **EIGHT** questions in **TWO** sections, **A** and **B**.*

*Answer **TWO** questions from Section **A** and **THREE** questions from Section **B**.*

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 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.**

© 2022 The Kenya National Examinations Council

Turn over

SECTION A: INDUSTRIAL MANAGEMENT

Answer any TWO questions from this section.

1. (a) List **four** factors of production. (4 marks)
- (b) (i) Outline **two** features associated with labour specialization in a manufacturing organization.
(ii) Outline **four** advantages of division of labour. (8 marks)
- (c) (i) Explain 'business law'.
(ii) List **three** effects of winding up a company. (5 marks)
- (d) (i) Explain the 'origin of trade'.
(ii) Name **two** international financial institutions that are capable of lending money to Kenya. (3 marks)
2. (a) List **four** responsibilities of administration. (4 marks)
- (b) Explain the following functions of management:
(i) motivating;
(ii) controlling. (4 marks)
- (c) (i) Explain 'office administration'.
(ii) State **four** merits of open plan offices. (6 marks)
- (d) (i) State **three** main elements of cost of a manufactured product.
(ii) Outline **three** merits of profit and loss account to an organization. (6 marks)

3. (a) (i) Explain the term 'Brand Name' in relation to quality of a product.
(ii) Outline **four** merits of brand name in (a) (i) to a manufacturing organization. (6 marks)
- (b) (i) Explain 'statistical quality control'.
(ii) List **four** benefits of statistical quality control in an industry. (6 marks)
- (c) (i) Define 'breakdown maintenance'.
(ii) List **three** elements of preventive maintenance. (5 marks)
- (d) State **three** disadvantages of 'on the job training' of a new employee. (3 marks)

SECTION B: ESTIMATING, TENDERING AND ENGINEERING SERVICES CONTRACTS

Answer any THREE questions from this section.

4. (a) Explain the term 'sources of law'. (2 marks)
- (b) Describe the features of the following legal sources of law:
(i) agreement;
(ii) precedent;
(iii) custom. (6 marks)
- (c) (i) Differentiate between law of contract and law of tort.
(ii) State **four** remedies for breach of contract. (8 marks)
- (d) Outline **four** defences in the law of tort. (4 marks)

5. (a) Outline **four** merits of lump sum contract. (4 marks)
- (b) Explain the following construction contract documents:
- (i) contract drawings;
 - (ii) contract specifications;
 - (iii) conditions of contract. (6 marks)
- (c) Explain the term 'clause' in reference to contracts citing **two** examples. (4 marks)
- (d) (i) Differentiate between a purchase order and an invoice.
(ii) Explain 'defect' in relation to building materials. (6 marks)
6. (a) Explain material take-off in relation to construction projects. (2 marks)
- (b) Outline the sequence followed in material take-off in electrical installation works. (5 marks)
- (c) Explain each of the following in relation to labour citing **one** example in each case:
- (i) mental labour;
 - (ii) skilled labour;
 - (iii) productive labour. (6 marks)
- (d) A worker manufactures half-litre plastic bottles at a cost of Ksh. 5 per bottle. He is required to make 195 bottles in a day of 8 hours but ends up making 235 bottles in 8 hours. Determine his extra daily earning using the piece rate system. (7 marks)
7. (a) Outline **four** merits and **two** demerits of negotiated contracts. (6 marks)
- (b) State the **six** steps followed in the evaluation of tenders. (6 marks)
- (c) Differentiate between competitive and selective tendering. (4 marks)
- (d) Outline **four** elements in a tender document. (4 marks)

8. (a) Outline five merits of critical path analysis in project management. (5 marks)
- (b) Differentiate between 'slack' and 'total float' in Critical Path Analysis. (4 marks)
- (c) Table 1 shows information about a project. Draw the network and indicate:
- (i) earliest start time;
- (ii) earliest finish times.

Table 1

| Task | Task Predecessors | Duration (hours) |
|------|-------------------|------------------|
| A | | 0 |
| B | A | 5 |
| C | A | 10 |
| D | B, C | 15 |
| E | B, C | 10 |
| F | E | 20 |
| G | D, F | 10 |
| H | G | 0 |

(11 marks)

THIS IS THE LAST PRINTED PAGE.