

2506/204

2507/204

**AIRFIELD SAFETY
PROCEDURES II AND
RESEARCH METHODS**

Oct./Nov. 2018

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**DIPLOMA IN AERONAUTICAL ENGINEERING
(AIRFRAMES AND ENGINES OPTION)
(AVIONICS OPTION)**

MODULE II

AIRFIELD SAFETY PROCEDURES II AND RESEARCH METHODS

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Mathematical tables/Scientific calculator;

Drawing instruments.

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

*Answer **FIVE** questions by choosing at least **TWO** questions from each section.*

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 3 printed pages.

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

SECTION A: AIRFIELD SAFETY AND PROCEDURES II

Answer at least **TWO** questions from this section.

1. (a) Differentiate between each of the following with respect to runways:
- (i) TORA and TODA;
 - (ii) ASDA and LDA. (8 marks)
- (b) With the aid of a labelled sketch, describe the markings of a typical runway. (12 marks)
2. (a) Discuss each of the following with reference to preparation of an aircraft for weighing:
- (i) jacking; (7 marks)
 - (ii) levelling. (7 marks)
- (b) Calculate the location of the center of gravity given:
- | | | |
|-----------------------|---|----------|
| Aircraft total weight | = | 6,860 lb |
| CG station | = | 80 |
- 140 lb is added to station 150 (6 marks)
3. (a) With reference to KCAR's, highlight the entities of an aviation security program. (6 marks)
- (b) Explain each of the following terms with respect to aviation security:
- (i) prohibited items;
 - (ii) sabotage;
 - (iii) disruptive passenger;
 - (iv) screening. (4 marks)
- (c) Highlight the organizations that form the National Civil Aviation Security Committee members. (6 marks)
- (d) Outline the security roles of the KCAA to an aircraft operator. (4 marks)
4. Highlight the mandatory occurrence reports under each of the following headings:
- (a) passenger / baggage / cargo; (5 marks)
 - (b) aircraft ground handling servicing; (5 marks)
 - (c) engines; (5 marks)
 - (d) aircraft and airfield facilities. (5 marks)

SECTION B: RESEARCH METHODS

Answer at least TWO questions from this section.

5. (a) Outline **five** advantages and **five** disadvantages of using telephone interviews as a method of collecting data. (10 marks)
- (b) Describe the features of a good questionnaire. (10 marks)
6. (a) Differentiate between each of the following sampling methods:
- (i) deliberate and stratified;
 - (ii) quota and area;
 - (iii) multi-stage and simple random. (12 marks)
- (b) Explain the main qualities of a good research. (8 marks)
7. (a) Highlight **four** significance of a research. (4 marks)
- (b) Discuss **eight** types of research with reference to project work in an aviation research center. (16 marks)
8. Describe the main sections of a research proposal. (20 marks)

THIS IS THE LAST PRINTED PAGE.