

2506/204

2507/204

**AIRFIELD SAFETY AND PROCEDURES II
AND RESEARCH METHODS**

June/July 2018

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

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

MODULE II

AIRFIELD SAFETY AND PROCEDURES II AND RESEARCH METHODS

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Mathematical tables/Non-programmable 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 shown.

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) Outline **five** aircraft unscheduled maintenance triggers. (5 marks)
- (b) Explain **five** inspections carried out after an aircraft is subjected to each of the following flight conditions:
 - (i) severe turbulence;
 - (ii) lighting strikes;
 - (iii) hard or overweight landing. (15 marks)
2. (a) Explain each of the following abbreviations applicable to aircraft weight and balance:
 - (i) OEW;
 - (ii) MTOW;
 - (iii) MLW;
 - (iv) MZFW. (8 marks)
- (b) Explain **six** major considerations when preparing an aircraft for weighing. (12 marks)
3. With the aid of a labelled sketch, show the layout of a typical airport. (20 marks)
4. With respect to Kenya Civil Aviation Authority Regulations
 - (a) Define each of the following:
 - (i) general aviation operations;
 - (ii) airside. (2 marks)
 - (b) Outline the **six** categories under which the regulations are subjected to. (6 marks)
 - (c) Explain the duties of Kenya Civil Aviation Authority. (12 marks)

SECTION B: RESEARCH METHODS

Answer at least TWO questions from this section.

5. Explain the chronological steps used in formulating a research project. (20 marks)
6. (a) Describe the **five** types of data analysis used in research. (10 marks)
- (b) Explain **five** factors considered when selecting a research sample size. (10 marks)
7. (a) Describe **five** factors considered when selecting a research project. (10 marks)
- (b) Highlight **four** ways of developing a hypothesis. (4 marks)
- (c) Outline the importance of research project proposal. (6 marks)
8. (a) Describe **three** advantages of using computers in conducting research. (6 marks)
- (b) Explain **seven** factors considered when choosing a research topic. (14 marks)

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