

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) lightning 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; *maximum take off weight.*
  - (iii) MLW; *- maximum landing weight*
  - (iv) MZFW. *- maximum fuel weight.* (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)

**THIS IS THE LAST PRINTED PAGE.**

*Sumit Patel*