

2506/204

2507/204

**AIRFIELD SAFETY PROCEDURES II
AND RESEARCH METHODS**

June/July 2017

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;

Drawing instruments;

Mathematical table/Non-programmable Scientific calculator.

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

Answer TWO questions from Section A; TWO questions from section B and ONE question from either section A or B.

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 AND SAFETY PROCEDURES

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

1. (a) Outline **five** aircraft schedule maintenance triggers. (5 marks)
- (b) Discuss each of the following types of aircraft maintenance checks:
- (i) check A;
 - (ii) check B;
 - (iii) check C. (15 marks)
2. (a) Explain **eight** effects of improper aircraft loading. (8 marks)
- (b) With reference to aircraft weighing:
- (i) describe the **two** vital elements in the weight and balance considerations. (4 marks)
 - (ii) outline **four** safety precautions considered when raising an aircraft on jacks. (4 marks)
- (c) Given:
- | | |
|---------------------------|----------|
| Aircraft total weight | 6.860 lb |
| Centre of gravity station | 80.0 |
- Determine the location of the centre of gravity if 140 pounds of baggage is added to station 150. (4 marks)
3. With respect to airport runways:
- (a) explain each of the following abbreviation:
 - (i) TORA;
 - (ii) TODA;
 - (iii) ASDA;
 - (iv) LDA. (8 marks)
 - (b) describe the **three** types. (6 marks)
 - (c) show the markings. (6 marks)

4. (a) "The Civil Aviation Authority shall establish a National Civil Aviation Security Program". Highlight **ten** issues that are addressed in the programme as enumerated under the Kenya Civil Aviation Security Regulations (2015). (10 marks)
- (b) Outline **ten** forms of "unlawful interference" to the safety of civil aviation and air transport according to the Kenya Civil Aviation Act (2013). (10 marks)

SECTION B: RESEARCH METHODS

Answer at least TWO questions from this section.

5. (a) With the aid of a labelled chart, illustrate the research process. (8 marks)
- (b) Explain **four**:
- (i) parts of the main text of a report;
 - (ii) qualities of a good research. (12 marks)
6. (a) Explain the **two** methods of data classification for analysis. (4 marks)
- (b) Highlight the general principles of tabulation with respect to data processing. (16 marks)
7. (a) Outline **five**:
- (i) characteristics of a good sample design; (5 marks)
 - (ii) reasons for sampling data. (5 marks)
- (b) Describe the criteria of selecting a sampling procedure. (10 marks)
8. Highlight:
- (a) the procedure of concluding literature review. (10 marks)
 - (b) a standard project reporting format. (10 marks)

THIS IS THE LAST PRINTED PAGE.