

2207/306

**AIRFIELD AND
SAFETY PROCEDURES**

Oct. / Nov. 2017

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**DIPLOMA IN AERONAUTICAL ENGINEERING
(AVIONICS OPTION)**

AIRFIELD AND SAFETY PROCEDURES

3 hours

INSTRUCTIONS TO CANDIDATES

This paper consists of EIGHT questions.

Answer FIVE questions in the answer booklet provided.

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.

1. (a) Explain why a bonded store is necessary in aviation industry. (6 marks)
- (b) Highlight the ideal operational stores procedures on receipt of new items according to the civil aviation authority. (14 marks)
2. (a) Explain the operational difference between a towing arm and a towing frame as applied in aircraft handling. (4 marks)
- (b) Discuss **four** methods of moving an aircraft. (4 marks)
- (c) Explain how a towing bridle and steering arm are used during handling. (7 marks)
- (d) Highlight the servicing that should be carried out on aircraft jacks before their use during ground handling. (5 marks)
3. (a) With the aid of a labelled block diagram, show a minor modification approval procedure of an aircraft. (8 marks)
- (b) Discuss why an airliner may opt to use fully equalised maintenance program. (12 marks)
4. Describe the function and safety requirements of each of the following ground support equipment:
- (a) hydraulic ground power units; (7 marks)
- (b) oxygen servicing equipment; (9 marks)
- (c) electric ground power units. (4 marks)
5. (a) Outline **four** objectives of accident reporting and investigation in aviation industry. (4 marks)
- (b) Explain each of the following terms as applied in flight safety:
- (i) permanent total disability;
- (ii) permanent partial disability;
- (iii) injury. (6 marks)
- (c) Discuss **three** types of aircraft accidents that must be reported and recorded. (6 marks)
- (d) List **four** limitations applicable to where accident reports and the privilege documents contained therein, may not be used as evidence or to obtain evidence in any disciplinary, administrative or legal action. (4 marks)

6. (a) Outline **eight** safety precautions considered when working with electrically operated tools and equipment. (4 marks)
- (b) With the aid of a labelled cross-sectional sketch, show the parts of each of the following fire extinguishers:
- (i) foam;
 - (ii) dry powder.
- (12 marks)
- (c) Highlight the marking details printed on the side of fire bottles apart from colour coding. (4 marks)
7. (a) Explain each of the technical and commercial freedoms established through the International Air Services Transits Agreements. (7 marks)
- (b) Outline the responsibilities of Kenya Civil Aviation Authority in order to achieve its mission of promoting the highest common standards of safety and environmental protection in civil aviation. (5 marks)
- (c) With regard to aircraft airworthiness, explain each of the following:
- (i) certificate of airworthiness;
 - (ii) continuing airworthiness;
 - (iii) validity of certificate of airworthiness;
 - (iv) aircraft limitations and information.
- (8 marks)
8. (a) Highlight the procedure of reporting an aircraft accident that occurs at unmanned aerodrome in Kenya. (12 marks)
- (b) Outline the roles of a crash and rescue recovery team leader, if a Kenyan aircraft crashes in a foreign state. (8 marks)

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