

2107/308

AIRFIELD AND SAFETY PROCEDURES

Oct./Nov. 2016

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

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

AIRFIELD AND SAFETY PROCEDURES

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Drawing instruments.

Answer FIVE of the EIGHT questions in the answer booklet provided.

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 pages are printed as indicated and that no questions are missing.

1. (a) With the aid of a labelled block diagram, show a minor modification approval procedure for an aircraft. (8 marks)
- (b) Discuss why an airliner may opt to use fully equalised maintenance program. (12 marks)
2. (a) With regard to civil aviation authority approved stores, explain six responsibilities of the chief inspector. (6 marks)
- (b) Outline the ideal stores procedure according to civil aviation authority. ✓ (14 marks)
3. (a) Explain the operational difference between towing arm and towing frame as applied in aircraft. (4 marks)
- (b) Discuss **four** methods of moving an aircraft. ✓ (4 marks)
- (c) Explain how a towing bridle and steering arm are used during aircraft handling. (7 marks)
- (d) Highlight the servicing that should be carried out on aircraft jacks before use for ground handling. ✓ (5 marks)
4. (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 accidents that must be reported and recorded. (6 marks)
- (d) List **four** limitations applicable to where accident reports and the privileged documents may not be used as evidence or to obtain evidence in any disciplinary, or legal action. (4 marks)
5. (a) Highlight the procedure of reporting an aircraft accident that occurs at an unmanned aerodrome in Kenya. (12 marks)
- (b) Outline **eight** roles of a crash and rescue recovery team leader if a Kenyan aircraft crashes in a foreign state. (8 marks)
6. (a) Explain the technical and commercial freedoms established through the International Air Services Transits Agreements. (7 marks)

- (b) Outline **five** responsibilities of Kenya Civil Aviation Authority. *legislation* (5 marks)
- (c) With regards to aviation 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)

✓ 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)
- ✓ (a) Outline **eight** safety precautions to be complied with when working with electrically operated tools and equipment. (4 marks)
- (b) With the aid of cross-sectional sketches, show the parts of each of the following fire extinguishers:
- (i) foam;
 - (ii) dry-powder.
- (12 marks)
- (c) Highlight **eight** marking details printed on the side of fire extinguishers bottles apart from colour coding. (4 marks)

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