2207/306
AIRFIELD AND SAFETY PROCEDURES
Oct./Nov. 2009
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AERONAUTICAL ENGINEERING AVIONICS (COMMUNICATION AND NAVIGATION OPTION)

AIRFIELD AND SAFETY PROCEDURES

3 hours

INSTRUCTIONS TO CANDIDATES

Candidates should have the following for this examination:

Answer booklet
Mathematical tables/Non programmable
Scientific Calculator
Drawing instruments.

*Answer any **FIVE** of the **EIGHT** questions in this paper.*
All questions carry equal marks.
Maximum marks for each part of a question are indicated.

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) Outline **five** methods of sending a distress message from a crashed aircraft. (5 marks)

(b) Discuss the pre-salvage to be made by an airline operator to recover an aircraft which has crashed in a thick forest within the state. (8 marks)

(c) Illustrate all emergency markings on a passenger aircraft. (7 marks)

2. (a) Differentiate between Airworthiness and Maintenance certificates of an aircraft. (4 marks)

(b) Discuss the importance of Air Navigation rules and regulations. (6 marks)

(c) (i) Outline the requirements of an approved aircraft maintenance organization in accordance to International Civil Aviation Organization.

(ii) State the reasons which can lead to cancellation of an approved organization licence. (10 marks)

3. (a) Differentiate between the following types of aircraft maintenance:

(i) block and progressive;
(ii) first and second line;
(iii) third and fourth line. (6 marks)

(b) Design and show the details contained in an aircraft component repairable card. (6 marks)

(c) As an engineer in charge of the electronic workshop, discuss the types of servicing that can be carried out on the aircraft components. (8 marks)

4. (a) Differentiate between each of the following terms as applied in aircraft ground handling:

(I) picketing and parking;
(II) trestling and jacking. (4 marks)

(b) Discuss each of the **three** methods of marshalling aircraft on ground. (6 marks)

(c) (i) Describe the methods used for clearing an aircraft for flight.

(ii) State **six** checks carried out during aircraft taxing. (10 marks)

5. (a) Differentiate between each of the following terms as applied to aircraft spares:

(i) Vendor and part number;
(ii) T.B.O. and T.R.T;
(iii) Stacking and Racking.

(6 marks)

(b) Outline the specifications indicated by Technical Stores bar coding. (5 marks)

(c) Discuss the **three** levels of provisioning aircraft spares. (9 marks)

6. (a) (i) Discuss the importance of battery trolleys in an aircraft approved organization.

(ii) Outline the maintenance checks that must be carried out on battery trolleys. (7 marks)

(b) Outline the safety precautions to be observed when handling each of the following aircraft ground equipment:

(i) cryotainers;
(ii) lamps and flood lights.

(8 marks)

(c) Explain the significance of keeping records on operating aircraft ground equipment. (5 marks)

7. (a) Outline the procedure of reporting an accident according to International Civil Aviation Organization requirements. (12 marks)

(b) Explain the factors considered before performing any task to enhance safety. (8 marks)

8. (a) Describe **five** workshop and hangar precautions to be observed and practiced to enhance safety on personnel and equipment. (10 marks)

(b) Write short notes on each of the following aircraft danger zones:

(i) propulsive;
(ii) radiation;
(iii) escape systems;
(iv) actuating devices;
(v) helicopter rotory wings.

(10 marks)