



**EAST AFRICAN SCHOOL OF AVIATION EXAMINATION
EXAM**

ENGINEERING SECTION

DIPLOMA IN AERONAUTICAL ENGINEERING

SUBJECT: AIRFIELD SAFETY & AUTOPILOT

STREAM: MOD III (AVIONICS)

Duration: 3 Hrs

DATE: 10/04/2011

TIME: 9.00AM – 12.00p.m

Instructions to Candidates:

1. *This paper consists of **THREE (3)** printed pages.*
2. *Answer **ANY 3** questions from **SECTION A** and **ANY 2** from **SECTION B***

SECTION A

- 1 (a)(i) In the Flight Director System, explain all the channels which are found in it. **(4 marks)**
- (ii) Define three possible sources of getting information or data to flight director systems. **(6 marks)**
- (b) Show what is contained in a 'typical' electro-mechanical flight director system with a well labeled diagram **(10 marks)**
- 2 Describe two instruments which are used mainly in autopilot system and out of these explain which one contains the following; (i) ILS failure flag (ii) Directional Gyro failure flag (iii) Selected course (iv) DME range (v) Attitude Gyro (vi) Flight Director warning flag (vii) Localizer flag and (viii) Decision height flag. **(20 marks)**
- 3 (a) Outline the purpose of Mode Control Panel (MCP) and mention at least five functions found in it. **(10 marks)**
- (b)(i) Explain the meaning of "gyro" warning flag in a Flight Director Fail Indications **(4 marks)**
- (ii) Which flag will come into view of the HSI when there is poor reception, unreliable or loss of VOR, LNAV and localizer information. **(4 marks)**
- (iii) State what the pilot thinks of when the "GS" flag comes in view in the instrument in front of the raw glide slope scale. **(2 marks)**
- 4 (a) (i) Name two major reasons which enabled the autopilot to be in existence in the aircrafts **(4 marks)**
- (ii) Define the term "Fail- Safe" system and explain how the pilot will respond to it in autopilot **(6 marks)**
- (b) Explain two types of loops in an autopilot system and state what is contained in each loop. **(10 marks)**
- 5 Describe all the components which are found in the inner loop control system and explain their purposes. 20 marks

SECTION B AIRFIELD SAFETY PROCEDURES

6. Sketch and label the layout of an approved store and state the activities carried out in any five sections. **(20marks)**

7. a) Outline the purpose of inventory control on an aircraft technical store **(5marks)**

b) Differentiate between the following terms as applied to an aircraft technical store

- i) Quarantine and bonded
- ii) Centralized and decentralized
- iii) Lified and shelf lified parts

(6marks)

c) Describe the procedures of stores spares transaction in airline technical stores

(9marks)

8. a) State any six categories of aircraft maintenance license issued by KCAA. **(6marks)**

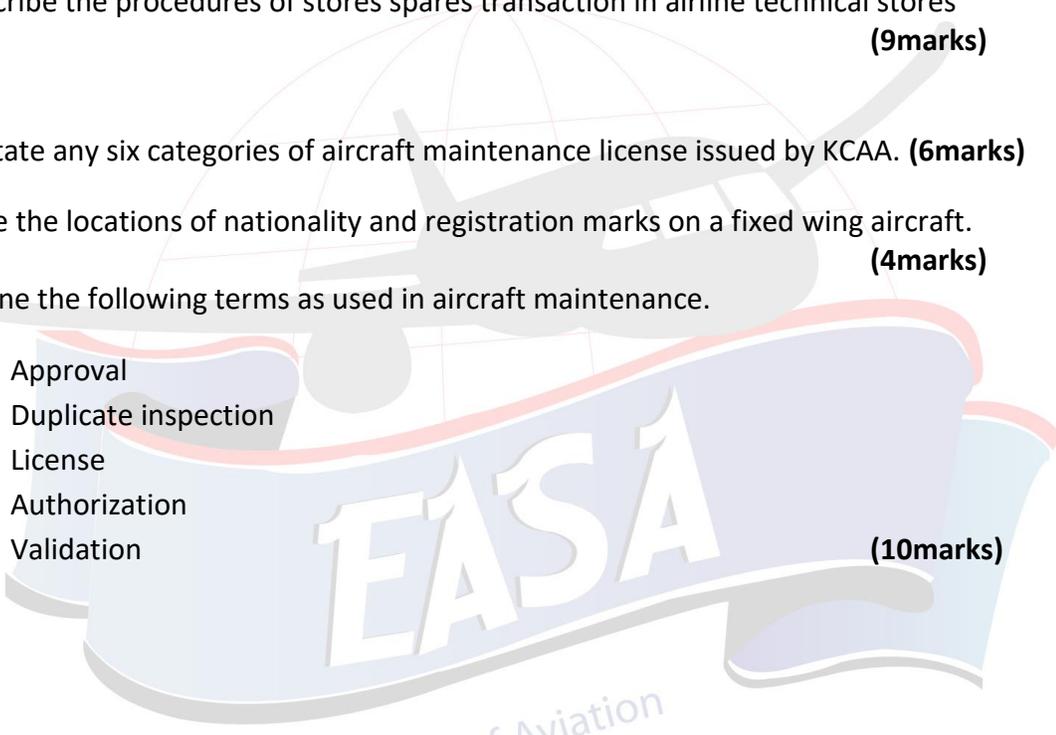
b) State the locations of nationality and registration marks on a fixed wing aircraft.

(4marks)

c) Define the following terms as used in aircraft maintenance.

- i) Approval
- ii) Duplicate inspection
- iii) License
- iv) Authorization
- v) Validation

(10marks)



East African School of Aviation