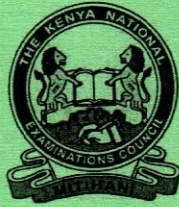


2506/206
AIRFRAME SYSTEMS I
Oct./Nov. 2018
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN AERONAUTICAL ENGINEERING
(AIRFRAME AND ENGINES OPTION)

MODULE II

AIRFRAME SYSTEMS I

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Drawing instruments.

This paper consists of EIGHT questions.

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

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.

1. With the aid of a cross-sectional sketch, discuss the automatic cut off valve (ACOV) under each of the following headings:
 - (a) reasons for fitting;
 - (b) construction;
 - (c) operation. (20 marks)

2. (a) Highlight the typical maintenance for controlling aircraft hydraulic fluid contamination. (8 marks)

 (b) With respect to the aircraft hydraulic system:
 - (i) outline **five** causes of contamination; (5 marks)

*Paint -
Dust -
Worn out rubber
Worn out metal*
 - (ii) explain the importance of fluid sampling; (2 marks)

to cap the reservoir & contaminants
 - (iii) outline **five** ways of minimizing contamination risks. (5 marks)

*Allowing chemicals to settle
Filtering
Sealing
Paint*

3. (a) With the aid of a labelled sketch, describe the operation of an aircraft landing gear control valve. (16 marks)

 (b) Outline **four** general pneumatic duct fitting and handling precautions. (4 marks)

*Prohibit
Exposure*

4. (a) Highlight the bleeding procedure for a typical shock strut. (10 marks)

 (b) With the aid of a labelled sketch, show the exploded view of the expander tube brake. (10 marks)

*Hydraulic
Tongue
Pin*

5. (a) Highlight **five** precautions to be observed during assembly of tyres and tubes. (5 marks)

*Grease
- Grease down
- well
jacking
Brakes in position*

- (b) Explain the function of each of the following aircraft pressurization components:
 - (i) discharge valve;
 - (ii) safety valve;
 - (iii) differential capsule;
 - (iv) inward relief valve;
 - (v) ditching control valve. (15 marks)

