



**EAST AFRICAN SCHOOL OF AVIATION  
EXAMINATIONS**

**FINAL EXAM**

**SAFETY SECTION**

**SUBJECT: AIRCRAFT GENERAL KNOWLEDGE**

**Stream: Flight Dispatch 25**

**Duration: 2Hrs**

**DATE: 10/05/17**

**TIME: 2.00 – 4.00PM**

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**Instructions to Candidate:**

1. *This paper consists of **FOUR (4)** pages*
2. Answer **ALL** questions in section A
3. Answer **ANY THREE** questions in section B
4. *Examination rules and regulations should be adhered to.*
5. *Maximum marks are indicated on each question*

**STUDENT'S NAME:** .....

**STUDENT'S NUMBER:** .....

**SECTION A:**

1. What is the position of piston during the compression stroke of a piston engine?
  - A. top dead center
  - B. bottom dead center
  - C. stationery
  - D. some point midway the bore
  
2. A cantilever wing:
  - A. Is externally braced with either struts and /or bracing wires
  - B. Is supported at one end only with no external bracing
  - C. Has both an upper and a lower airfoil section
  - D. Folds at the roots section to ease storage in confined spaces
  
3. Station numbers (stn) and waterlines (WL) are:
  - A. Means of locating airframe structure and components
  - B. Passenger seats location
  - C. Runway markings for guiding the aircraft to the terminal
  - D. Compass alignment markings
  
4. The methods used to provide de-icing in flight can be:
  - A. Mechanical or pneumatic fluid
  - B. Pneumatic or thermal fluid
  - C. Electrically heated or air heated or oil heated
  - D. Centrifugally forced or ram air heated
  
5. The maximum Zero Fuel Mass (MZFM) of an aircraft is:
  - A. The maximum permissible take off mass of the aircraft
  - B. The maximum permissible mass of an aircraft with no useable fuel
  - C. The maximum permissible mass of an aircraft with zero payload
  - D. The maximum permissible landing mass
  
6. Aircraft structure consists mainly of:
  - A. Light alloy steel sheets with copper rivets and titanium or steel materials at points requiring high strength
  - B. Magnesium alloy sheets with aluminum rivets and titanium or steel at points requiring high strength

- C. Aluminum alloy sheets and rivets with titanium or steel materials at points requiring high strength
- D. Aluminum sheets and rivets with titanium or steel materials at points requiring high strength.

7. Control surface flutter:

- A. Provides additional lift for takeoff and landing in the event of engine failure
- B. Occurs at high angles of attack
- C. Is a destructive vibration that must be damped out within the flight envelope
- D. Is a means of predicting the critical safe lift of the aircraft

8. The skin of a modern pressurized aircraft:

- A. Is made up of light alloy steel sheets built on the monocoque principle
- B. Houses the crew and the payload
- C. Provides aerodynamic lift and prevent corrosion by keeping out adverse weather
- D. Is primary load bearing structure carrying much of the structural loads

9. A fail safe structure:

- A. Has a programmed inspection cycle to detect and rectify faults
- B. Is changed before its predicted life is reached
- C. Has redundant strength which will tolerate a certain amount of structural damage
- D. Is secondary structure of no structural significance

10. The primary purpose of the fuselage is to:

- A. Support the wings
- B. House the crew and payload
- C. Keep out adverse weather
- D. Provide access to the cockpit

**SECTION B:**

1. A. Outline **FIVE** basic requirements of Aircraft fuels. (5 marks)  
B. Using sketches, describe the operation of aircraft hydraulic system. (10 marks)  
C. List any **FIVE** safety devices installed on retractable landing gear systems(5 marks)
  
2. A. List any **FOUR** basic parts of an aircraft. (4 marks)  
B. Highlight the functions of the parts listed in in 2A. above. (4 marks)  
C. Highlight the **FOUR** major requirements of Aircraft instruments. (8 marks)  
D. List any **FOUR** aircraft instruments used in modern aircrafts. (4 marks)
  
3. A. List the basic components of piston engines. (5 marks)  
B. Briefly describe the operation of a reciprocating engine using the aid of a Pressure-Volume diagram (15 marks)
  
4. A. Highlight **SIX** functions of Aircraft Pneumatic system. (6 marks)  
B. Outline the effects of icing on aircraft/engine performance. (8 marks)  
B. Outline any SIX consequences of overloading an aircraft. (6marks)