



EAST AFRICAN SCHOOL OF AVIATION

END TERM EXAM 1

DIPLOMA IN AERONAUTICAL ENGINEERING

AIRFIELD & SAFETY PROCEDURES

Stream: YEAR III TEP YEAR 3 (A&E)

DATE: 06/04/2017

TIME: 2.00 PM - 5.00 PM.

INSTRUCTIONS TO CANDIDATES

1. This paper consists **THREE (3)** questions,
2. Answer **ALL** questions.

1. Explain the procedure of carrying out the following
 - a. Jacking for maintenance **(8marks)**
 - b. Starting an engine **(8marks)**
 - c. Parking aircraft in the apron **(4marks)**

- 2 (a) State:
 - (i) FOUR advantages of decentralized store
 - (ii) TWO functions of bin card
 - (iii) FOUR functions of inventories **(10 marks)**
 (b) Differentiate between the following terminologies as applied to aircraft servicing :
 - (i) Inspection and service
 - (ii) Rectification and salvage
 - (iii) Check and examine **(6marks)**
 (c) Explain TWO methods of supplying compressed air to the hangar stating the necessary requirements. **(4marks)**

- 3 (a) Outline the safety precautions to be observed before carrying out rescue operations on a crashed aircraft. **(5marks)**

 (b) Explain the purpose of each of the following aircraft crash and rescue equipments stating in each case the location
 - (i) Emergency radio beacon (ELT)
 - (ii) Flare
 - (iii) Life vest (life jacket) **(9marks)**
 (c) Using a sketch, describe the construction of the aircraft four door evacuator chute and explain the operation **(6marks)**

4. (a) Explain FIVE precautions to be observed when ground running a high powered turbo jet engine aircraft on a windy day. **(10 marks)**

 (b) With aid of a twin engine jet aircraft sketch, describe the engine intake and exhaust hazard areas when no. 1 engine is idle power and no, 2 engine is at full power. **(10 marks)**

5. (a) Outline FIVE safety precautions for each of the following aircraft ground handling:
- (i) Refuelling
 - (ii) Jacking
 - (iii) Towing **(15 marks)**
- (b) State FIVE factors which can cause an aircraft to stall **(5 marks)**
- 6 (a Explain the safety precautions to be observed immediately after an aircraft has crashed with respect to :
- (i) Explosive actuated devices
 - (ii) Gaining access to the aircraft
 - (iii) Approaching the aircraft with the engines still running. **(12 marks)**
- (b) Discuss the ideal condition for storing aircraft rubber based spares. **(8Marks)**
- 7 (a) Outline FIVE aircraft landing gear design features, that will prevent inadvert retraction when aircraft is on ground **(5 marks)**
- (b) Explain each of the THREE methods of lowering the aircraft landing gear in flight and each case, state the indication. **(6 marks)**
- (c) Discuss the inspection to be carried out on an aircraft after the pilot has reported a heavy landing incident. **(9marks)**
- 8 (a) Explain the safety precautions to be observed when using the following ground equipments
- (i) Pneumatic ground equipment
 - (ii) Hydraulic **(10 marks)**
- (b) Differentiate between scheduled and unscheduled aircraft maintenance. **(2marks)**
- (c) Outline the classes of fire and state the type and the best extinguishing agent for each. **(8marks)**