EAST AFRICA SCHOOL OF AVIATION.

SUBJECT: **THEORY OF FLIGHT (CAT)**

ICAO CODE : 052

CLASS   : ATC 69

COURSE   : BASIC AERODROME

DATE: 22/11/2016   **TIME: 8.30 - 10.30AM**

INSTRUCTION TO CANDIDATES

1. *Answer the questions as per the instructions given*

1. a) State the benoullis principle **(6 marks)**

   b) What do you understand by burble point? **(5 Marks)**

   c) Name three circumstances that would cause an aeroplane to stall

   (6 Marks)

2. Define the following terminologies

   a) Angle of incidence

   b) Angle of attack

   c) Relative wind **(9 Marks)**

3. Name:

   a. The two drag forces that sum up to total drag. **(4 Marks)**

   b. The three forms of Parasite Drag **(6 Marks)**

   c. In an aeroplane what force is overcome by thrust? **(3 Marks)**

4. a) Name the primary control surfaces of an aeroplane (**3 Marks**)

   b) Briefly describe the following:-

   i. Pitching

   ii. Rolling

   iii. Yawing **(9 Marks)**

   c) When an aeroplane is in level flight and cruising, name the four Forces in balance

5. State whether the following statements are TRUE Or FALSE

   i) The stalling speed determines the lowest speed an aircraft can Be flown.

   ii) As the speed of an aircraft is increased the angle of attack should Be decreased to maintain level flight.

   iii) Yawing is a rotation around the normal axis and is corrected by the Rudder.

iv) By changing the angle of attack of a wing, the pilot can control the aeroplane's lift, airspeed, and drag. **(8 Marks)**

6. a) Name the three axis of rotation of an aircraft. **(6 Marks)**

    b) Around what point are the three axis of rotation designed to rotate in aeroplanes to maintain stability? **(3 Marks)**

7. State the qualities that an aircraft must have so as to ensure stability of an aircraft in flight. **(8 marks)**

8. List and briefly describe the four strokes of the working cycle of a piston engine. **16 marks)**
9. List the 4 types of Gas turbine engines used in aircraft **(4 Marks)**