KENYA AERONAUTICAL COLLEGE

**DIPLOMA IN AERONAUTICAL ENGINEERING**

SUBJECT : AERODYNAMICS

CLASS : 09MECH (SECOND YEAR 1ST TERM)

TIME : 2 HRS

DATE : 10TH OCTOBER, 2012

1. (a) Define
   * 1. Stability
     2. Maneuverability
     3. Controllability **(6marks)**

(b)List four factors that which affects longitudinal stability **(4marks)**

(c) Discus how the tail plane is designed to enhance longitudinal stability

**(6marks)**

1. Describe how the pitching moment of the fuselage affects longitudinal stability

**(4marks)**

1. Discuss how longitudinal dihedral have stabilizing effects to the tail first aircraft

**(5marks)**

1. Describe how dihedral angles enhance lateral stability.  **(5marks)**
2. Describe how the following stabilize aircraft
3. Sheep back
4. High keel surface & low C of G
5. High wing surface **(15marks)**