



# EAST AFRICAN SCHOOL OF AVIATION CAT

## SUBJECT: AVIATION METEOROLOGY

Stream: AREA AIRWAYS CONTROL No. 47 (UGANDA)

Duration: 1 Hr

DATE: 15/11/2016

TIME: 10.40 – 12.10 AM

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### INSTRUCTIONS TO CANDIDATE:

- 1) *This paper consists of THREE (3) printed pages.*
- 2) *Answer all questions.*

**Question 1:**

- (a) The transition zone between the stratosphere and the mesosphere is referred to as? **(2marks).**
- (b) Where in the atmosphere is the ozone layer located? **(2marks)**
- (c) Define an isothermal layer **(2marks)**
- (d) How does temperature vary in the mesosphere? **(2marks)**
- (e) Where in the atmosphere is 99% of water vapour found **(2marks)**

**Question 2:**

- (a) List all clouds as given in the cloud *genera* **(5marks).**
- (b) What is the significance of nimbostratus clouds to aviation? **(3marks).**
- (c) Which are two (2) examples of clouds that produces turbulence? **(2marks).**

**Question 3:**

- (a) What is the significance of *stratus* clouds to aviation? **(2marks)**
- (b) List any three (3) hazards associated with *stratus* clouds **(3marks)**
- (c) List any three (3) weather hazards associated with a mature *Cumulonimbus* cloud **(3marks)**
- (d) What are lino meters? **(2marks)**

**QUESTION 4.**

- (a) List the three (3) processes of cloud formation **(3marks)**
- (b) List any four (4) methods of cloud formation **(4marks)**
- (c) Which method produces convective clouds? **(3marks)**

**Question 5:**

- a) State the Buys Ballot Law **(1marks)**
- b) List any three (3) weather phenomena that you would associated with the following pressure systems:
  - (i) Ridge**(3marks)**
  - (ii) Trough**(3marks)**
  - (iii) High**(3marks)**

**QUESTION 6:**

- (a) Define turbulence **(2marks)**
- (b) What are the three (3) characteristics of turbulence? **(3marks)**
- (c) List three basic weather mechanisms that produce turbulence **(3marks)**
- (d) What does mountain wave turbulence create on the lee side of a mountain? **(2marks)**

**QUESTION 7.**

- (a) List any four (4) hazards of aircraft turbulence **(4marks)**
- (b) Define wind shear turbulence **(2marks)**
- (c) In wake turbulence, define *A sharp- edge gust* **(2marks)**
- (d) What are the effects of an outburst (microburst) to a landing or a taking off aircraft? **(2marks)**

**QUESTION 8.**

- a) Define an air mass **(3marks)**
- b) List the three (3) factors that determine the uniformity of an air mass **(3marks)**
- c) Name any four (4) source areas of air masses in Africa **(4marks)**

**QUESTION 9.**

- a) Air masses are classified on the basis of two (2) factors. Name the factors **(4marks)**
- b) List the four names of air masses of as depicted by latitude **(4marks)**
- c) Define a warm air mass **(2marks)**

**QUESTION 10.**

- a) Define a cold air mass **(2marks)**
- b) List any four (4) characteristics a typical cold air mass is recognized by **(4marks)**
- c) Explain how an air mass is modified? **(4marks)**