DEPARTMENT OF GEOGRAPHY
SCHOOL OF PHYSICAL SCIENCES
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.

Undergraduate Examination for First Semester 2015/2016 Session.

Course Title: Atmospheric processes, weather and climate. (GRY 215) Course **Unit:** 3

Instructions: Answer any Three (3) questions in all. The use of relevant diagrams, illustrations and equations will be rewarded.

Time allowed: 2 hrs. 30 minutes

1. (a) Discuss briefly the various forces responsible for the generation of wind.
   (b) Define geostrophic wind (Vg) and derive an expression for it.
   (c) Suppose at the surface, a 1000m thick layer of air under standard condition has an average density of $1.1kg/m^3$ and acceleration due to gravity is $9.8m/s^2$. Calculate the rate at which pressure decreases with height.

2. (a) Define a cloud and classify clouds according to their shapes.
   (b) List ten (10) cloud genera and classify them according to their height
   (c) Prepare a table of cloud types and the precipitation associated with them

3. (a) Define an air mass and a front.
   (b) List four types of air mass, their source region and their characteristics.
   (c) Enumerate the four basic types of front and describe how each could be identified on a weather map

4. (a) Define Climate change
   (b) List five (5) factors of climate change
   (c) List five (5) evidences of climate change.

5. Write an explanatory note on any five of the following:
   (a) Hurricanes
   (b) Tornadoes
   (c) Thunderstorms
   (d) Blizzards
   (e) Avalanches
   (f) Land and Sea Breezes
   (g) Land spouts