

DEPARTMENT OF GEOGRAPHY
SCHOOL OF SCIENCE AND SCIENCE EDUCATION
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
FIRST SEMESTER EXAMINATION 2009/2010 SESSION.

COURSE TITLE: Atmospheric process weather and climate (GRY 215)

Instructions: Answer any Four Questions.

Time Allowed: 2hrs

1. (a) A front is defined in terms of its source region and characteristics. Expatiate on this statement and draw conclusions for the various types of fronts.(10mks)
2. The processes that take place in the atmosphere is governed by some basic laws and principles. Discuss these various forces as it affects the 0-1000m layer of the atmosphere.(20mks)
3. Distinguish between the following;
 - a) frontal zone and a frontal depression
 - b) weather and climate
4. Distinguish between weather and climate. Discuss in details the "Futa weather observatory" and state its relevance in the monitoring of atmospheric processes.(20mks)
5. State the "Buys Ballot law" and explain in detail its contribution to Meteorologist in identifying areas of cyclones and anticyclones.
6. (a) Derive an expression for the hydrostatic equation.(5mks)

(b) A 1000m thick layer of air has a density of 0.9kg per cubic meter, if the pressure changes with height at this layer is 120hectopascals per metre and the layer is at the 40 degrees Latitude. If the coriolis parameter is given as fg. Find the geostrophic wind in terms of the coriolis parameter.(15mks)