

DEPARTMENT OF GEOGRAPHY
SCHOOL OF SCIENCE AND SCIENCE EDUCATION
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

1st SEMESTER EXAMINATION, 2011/2012 SESSION

COURSE CODE: REM 411P

TIME: 3 Hours

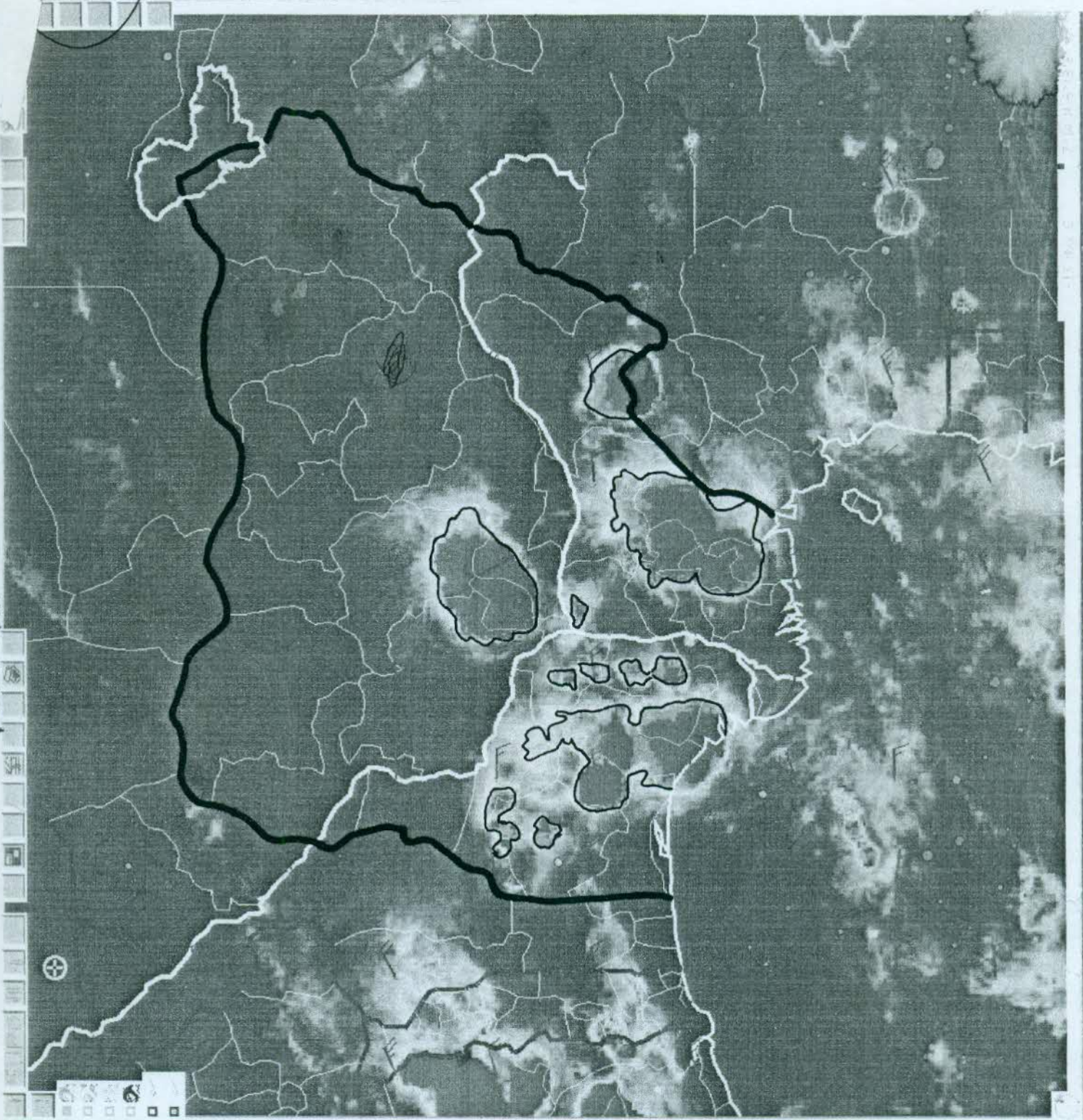
COURSE TITLE: SATELLITE METEOROLOGY

INSTRUCTION: ANSWER **QUESTION 1(ONE)** AND ANY **THREE (3)** QUESTIONS OF YOUR CHOICE

- 1) Using the attached Meteosat Satellite Image of some West African Countries, attempt the following:
 - i) The Linesquall prevailing over Abuja, Nigeria at 1900 GMT has a speed of 50km/hr (14m/s). Calculate the time it will take to reach Kaima in Kwara State (a distance of about 400km).
 - ii) When did the Squall left Yola in Adamawa State (a distance of about 700km East of Abuja)?
 - iii) Compare the Synoptic features of Far-north and Southern part of Nigeria as displayed in the satellite image.
 - iv Using the same image, re-draw a map of Nigeria showing the ITCZ position in the country.
- 2) a) Describe the types of Meteorological Satellites you know.
b) Distinguish between Active and Passive sensors
c) Give (3) examples for each of the sensor mentioned in (2b) above.
- 3) Discuss with specific reference to Nigeria the relevance of Satellite technology to weather Forecasting and Prediction.
- 4) Provide short explanatory notes on any six (6) of the following:
 - a) Wavelength b) Electromagnetic wave c) Infra-red imagery
 - d) Albedo e) sea surface temperature f) TIROS-N satellite series
 - g) Second generation satellite h) Satellite resolution
- 5) Describe how the following cloud features of satellite imagery are used in extracting information For weather forecasting:
 - a) Drop size b) stratification c) Phase d) Brightness
- 6) Distinguish between Conventional and Satellite based Meteorological observation and Monitoring with emphasis to their merits and limitations.

REMARKS OF SURVEY

SECTION OF SURVEY AND SURVEY STATION



1. The boundary line between the two sections is shown in black.

2. The survey station is marked with a small circle and a cross.