

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.

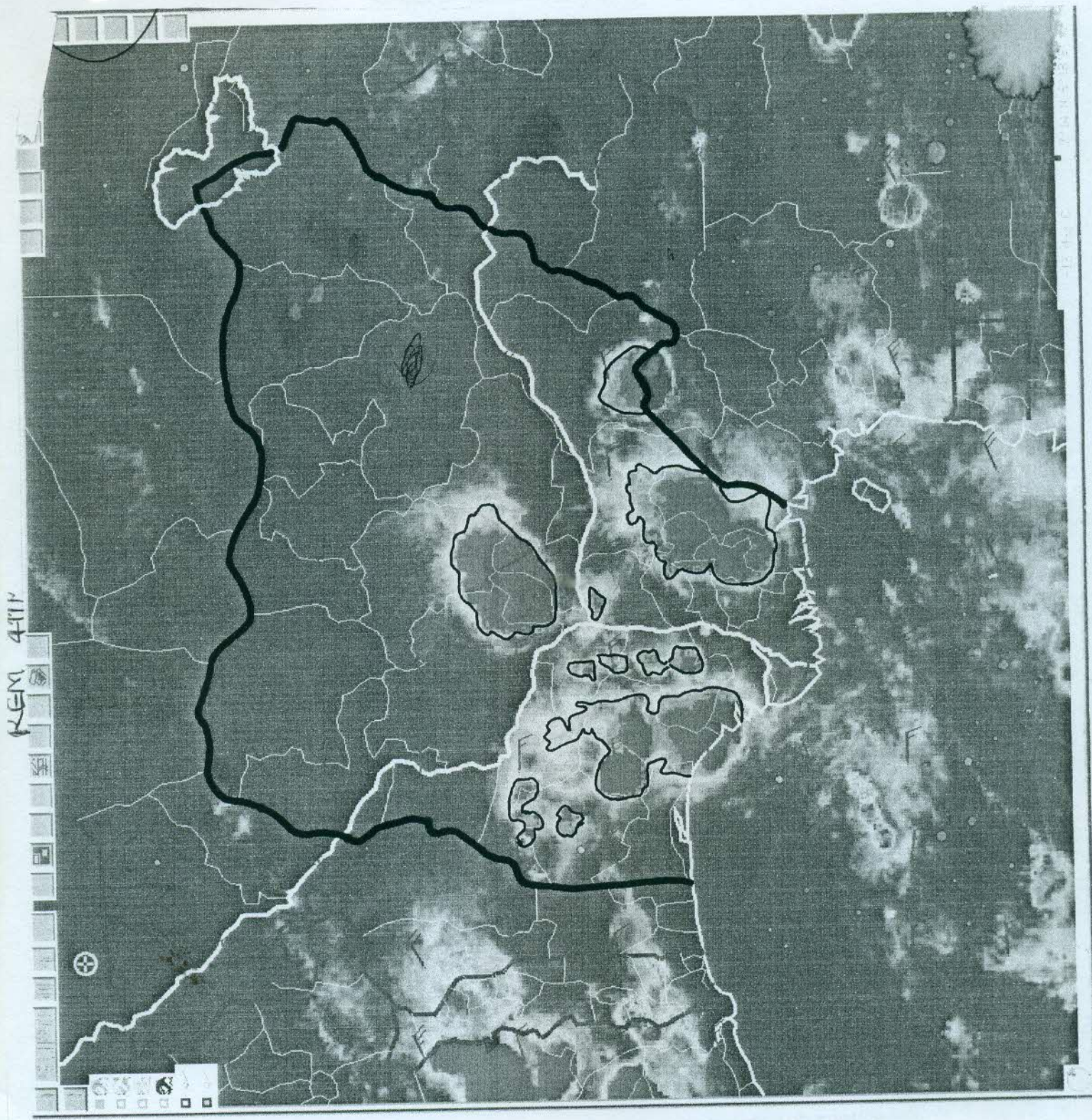
- 3) Discuss with specific reference to Nigeria the relevance of Satellite technology to weather Forecasting and Prediction.

- 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.

MEMPHIS DEPARTMENT
OFFICE OF THE CITY ENGINEER



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