

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.
SCHOOL OF NATURAL AND APPLIED SCIENCES
DEPARTMENT OF GEOGRAPHY
2012/2013 FIRST SEMESTER EXAMINATION

COURSE CODE: REM 313 (3 units)

COURSE TITLE: OPTICAL SYSTEM

INSTRUCTIONS: Answer Question one (1) and any other three (3) Questions. Credit will be given for relevant illustrations and diagrams

TIME ALLOWED: 3 HOURS

1. From the list of satellite sensors below

- i Spot HRV
 - ii Land sat MSS
 - iii NOAA AHRR
 - iv METEOSAT- Second generation
- a) Select the most suitable sensor for the application of urban land use planning, dust haze monitoring and planning and land cover mapping.
- b) Identify the scene coverage, spatial and spectral resolutions of any one sensor above.
- c) Describe the type of sensors based on the electro-magnetic spectrum utilized

2 Describe the function of each of the following as a component of a simple camera the system.

- i Lens
- ii Filter
- iii Shutter
- iv Aperture
- v Film

3 Compare and contrast, using relevant examples the optical mechanical and linear array scanners.

- 4.a) Identify the major characteristics of optical, thermal and radar wave bands
- b) Distinguish between push broom and whisk broom mode of image acquisition

5 List and explain three (3) types of instruments used for the three-dimensional study of aerial photograph

6 Describe the procedure for processing blank/white films