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**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA**

**FACULTY OF SCIENCES**

**DEPARTMENT OF PURE AND APPLIED SCIENCE**

 **2018\_2 SEMESTER EXAMINATION**

**COURSE CODE: PHY 457**

**COURSE TITLE: ENVIRONMENTAL PHYSICS**

**CREDIT UNIT 3**

**TIME ALLOWED (2½ HRS)**

**INSTRUCTION: *Answer question 1 and any other four questions***

**QUESTION 1**

 a. Mention all the objects that make up the solar system. (6 Marks)

 b. What is synchronous satellite? (3 Marks)

 c. At what height above the surface of the earth will a synchronous satellite

 be placed in orbit?

 ( Given: The period of a synchronous satellite is 8.64 x104s,

 R =6400km is the radius of the earth and h is the height above the surface of the earth. )

 (4 Marks)

 d. List four domains of information obtained from remotely sensed data? (4 Marks)

 e. What is a pixel? (3 Marks)

 f. What is an advantage to using multi-temporal imagery? (2 Marks)

**QUESTION 2**

 a. What is spectral resolution? (3 Marks)

 b. What is spatial scale? (3 Marks)

 c. Explain temporal resolution (3 Marks)

 d. What is environmental Physics? (3 Marks)

**QUESTION 3**

 a. Enumerate some of the advantages of using satellite platforms?(4 Marks)

 b. What is a limitation to using passive sensors? (4 Marks)

 c. Highlight two common active sensors used in remote sensing? (4 Marks)

**QUESTION 4**

  a. What is a green house? (4 Marks)

 b. List the greenhouse gases (4 Marks)

 c. What is the effect of greenhouse gases on the planet earth? (4 Marks)

**QUESTION 5**

 a. What is weathering? (3 Marks)

 b. Write short notes on the following: (i) physical environment (3 Marks)

 (ii) biological environment (3 Marks) (iii) cultural environment. (3 Marks)

**QUESTION 6**

 a. In its broadest sense, how would you describe remote sensing? (4 Marks)

 b. State briefly the difference between a geostationary satellite and a satellite having a

 sun synchronous orbit. (4 Marks)

 c. Mention four advantages of renewable energy resources over that of non-renewable? (4 Marks)