



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA**  
**FACULTY OF SCIENCES**

**DEPARTMENT OF PURE AND APPLIED SCIENCE**

**2021\_2 EXAMINATIONS<sup>5678</sup>**

**COURSE CODE:** PHY361  
**COURSE TITLE:** GEOPHYSICS II  
**CREDIT UNIT:** 2  
**TIME ALLOWED:** (2 HRS)

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

**QUESTION 1**

- (a) Briefly explain the following i. Geophones ii. Seismometers iii. Noise 3 marks
- (ii) Distinguish between a Seismograph and A Seismogram 3 marks
- (b)i. State the theory behind seismic reflection. 3 marks
- (ii) Describe geophones with the aid of a simple diagram 3 marks
- (c) Explain reflection survey 3 marks
- (ii) Describe the characteristics of seismic waves and formation of other types of waves. 10 marks

**QUESTION 2**

- (a) Write short notes on the following in relation to reflection. 4 marks
- (i) CMS - Common mid- point shooting
- (ii) Depth Conversion. 4 marks
- (b) Explain with aid of diagram Refractor Relief and True Velocities 7 marks

**QUESTION 3**

- (a) What are principal refractors? 5 marks
- (b) With the aid of a diagram, explain critical refraction at two interfaces. 6 marks
- (c) Explain the terms positioning shots and centre shots 4 marks

#### **QUESTION 4**

- (a) What are intercept times? 3 marks
- (b) Explain by the use of equations, the reciprocal time interpretations. 6 marks
- (c) Differentiate between P wave and S wave 6 marks

#### **QUESTION 5**

- (a) How Does A Seismograph Works? 5 marks
- (b) Why do P-waves travel faster than S-waves? 10 marks