



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF PURE AND APPLIED SCIENCES
2020_1 SEMESTER EXAMINATION
ALTERNATIVE A

COURSE CODE: PHY 361

COURSE TITLE: GEOPHYSICS I

CREDIT UNIT 2

TIME ALLOWED (2 HRS)

INSTRUCTION: Answer question 1 and any other three questions

- 1ai. What is Seismic wave? (3 marks)
- ii. Mention four (4) types of Elastic waves (6 marks)
- bi. Describe a suitable structure for Seismic refraction method (4 marks)
- ii. State the major application of Seismic refraction (4 marks)
- c. State the limitation of Seismic refraction (4 marks)
- d. Write two (2) methods required for mineral exploration. (4 marks)
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- 2a. What is Snell's law? (5 marks)
- b. What is the major target to be investigated by the Seismic method (5 marks)
- c. Differentiate between geophones and hydrophones (5 marks)
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- 3a. Differentiate between P – waves and S – waves in terms of medium of travelling (5 marks)
- b. What is random noise? (4 marks)
- c. How can random noise be reduced? (6 marks)
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- 4a. What is Seismography? (4 marks)
- b. State the equation for Reflection Coefficient (RC) (4 marks)
- c. What is intercept lines? (3 marks)

- d. From the Reflection Coefficient (RC) equation, state the condition for:
- i. a negative pulse (2 marks) ii. a positive pulse (2 marks)
- 5a. What are the advantages of Seismic Reflection method over Seismic refraction method? (6 marks)
- b. What is the main advantage of Seismic reflection over seismic reflection? (5 marks)
- c. Mention three (3) geophysical methods required for hydrocarbon exploration (4 marks)