



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
2024 1 EXAMINATION

COURSE CODE: ESM422

CREDIT UNIT: 2

TIME: 2 HRS 15 MINS

Instruction: Attempt question number ONE (1) and any other TWO (2) questions.

Question number one (1) is compulsory and carries 30 marks, while the other questions carry equal marks (20) each

- 1a. In what practical applications is fluid dynamics used within the field of geomorphology, and how does it contribute to understanding natural processes? 5marks
- 1b: What challenges might arise when applying the Appraised Value Method to value inactive exploration properties? 5marks
- 1c. Explain the concept of "option investments" and how it influences the Net Present Value (NPV) and Internal Rate of Return (IRR) calculations.
- 1d. What was the first practical application of the Contingent Valuation Method CVM, and what was its outcome? 3marks
- 1f. What are some challenges associated with early contingent valuation surveys? 5marks
- 2a. How do tectonic processes impact geomorphology, and what timescales are involved? 5marks
- 2b. How do biological processes contribute to geomorphic changes in landscapes? 3marks
- 2c. How do seismic techniques impact the environment during data acquisition, especially in marine surveys? 4marks
- 2d. What are some advantages and disadvantages of refraction seismic methods? 8marks
- 3a. Explain the principle behind the Magnetotelluric (MT) method and its ability to provide information about subsurface electrical properties at great depths. 5marks
- 3b. What distinguishes the Electromagnetic (EM) method from other electrical techniques? 5marks
- 3c. In what ways does solid mechanics contribute to the field of geotechnical engineering. 5marks
- 3d. Describe the main sub-disciplines of fluid dynamics and their respective focuses. 5marks