

**FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**  
**SCHOOL OF PHYSICAL SCIENCES**  
**DEPARTMENT OF GEOLOGY**

**SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BTech GEOLOGY,**  
**2017/2018 SESSION**

**COURSE CODE: GEL 524**

**UNIT: 2**

**COURSE TITLE: SEDIMENTARY ENVIRONMENTS AND BASIN ANALYSIS**

**INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS**

**TIME ALLOWED: 2 HOURS**

**DATE: 18<sup>TH</sup> SEPT., 2018**

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- 1a. Explain the concept of a depositional environment.
- 1b. Give an account of how depositional environments can be identified from wireline logs.
  
2. Discuss marine sub-environments and how they can be identified using benthic foraminifera.
  
- 3a. Explain the concept of sedimentary basins.
- 3b. Draw the geological map of Nigeria, and show the sedimentary basins and basement complex units.
  
- 4a. Discuss the concept of geosynclinal theory and its shortcoming.
- 4b. Explain the concept of plate tectonics and highlight the lines of evidence that support it.
  
- 5a. Define sedimentary facies.
- 5b. Explain how the following can be recognized in a sedimentary record:  
    (i) Regressive Facies   (ii) Transgressive Facies
  
- 6a. Discuss the concept of basin analysis.
- 6b. Distinguish between static and dynamic basin analysis.
- 6c. Explain the significance of basin analysis in evaluating the petroleum potential of a sedimentary basin.