

**FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**  
**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY (I.T.E)**  
**FIRST SEMESTER 2021/2022 SESSION EXAMINATION**  
**COURSE CODE: ITE 352**  
**TITLE: SEMI-CONDUCTOR DEVICES**  
**INSTRUCTIONS**

**ANSWER ANY FOUR (4) QUESTIONS.**

**TIME ALLOWED: 2 HOURS**

- (1a) What do you understand by the term "semi-conductors"?
- (1b) Give two examples of semi-conductors you know.
  
- (2a) Draw and explain the structure of any atom.
- (2b) What is valence electron?
  
- (3a) Explain the terms:
  - (a) intrinsic semi-conductor
  - (b) extrinsic semi-conductor
  
- (4a) Explain using diagrams what are:
  - (a) majority charge Carriers.
  - (b) minority charge Carriers.
  
- (5a) What is barrier voltage?
- (5b) How does it works?