

**FEDERAL UNIVERSITY OF TECHNOLOGY MINNA**  
**SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION**  
**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION**  
**SECOND SEMESTER EXAMINATION, 2022/2023 SESSION**

COURSE CODE: ITE 212

COURSE TITLE: AUTO ENGINES

TIME: 2 HRS

INSTRUCTIONS: **Answer four (4) Questions only.**

- 1a. Draw a well labelled poppet valve with at least six (6) parts placed correctly.
- 1b. Simply discuss a cylinder head layout.
  
- 2a. List and explain some important engine parts and State the six (6) causes of valve damage.
- 2b. Explain the role of a cylinder head.
  
- 3a. An Automobile engine backfires, state the possible causes and solution to this fault.
- 3b. An automobile starter is noisy and has oil stain on engine or on the floor state the possible causes and solution to both faults.
  
- 4a. What is cylinder porting?
- 4b. Discuss a combustion chamber and the various types
  
- 5a. With the aid of a neatly labelled sketch, show a simple auto engine cam and follower mechanism.
- 5b. List the techniques of engine decarbonization in use.
  
- 6a. An internal combustion engine needs a mixture of oil and fuel in the same tank for effective performance while another is separated in different tanks, one produces smoke and the other doesn't, explain the reason for this phenomena and its effect on carbon build up.
- 6b. list five (5) effects of wrong valve timing.