

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION
DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION
FIRST SEMESTER EXAMINATION, 2021/2022 SESSION

COURSE CODE: ITE 212

COURSE TITLE: AUTOMOBILE ENGINES

TIME: 2 HRS, 15 MINS

INSTRUCTIONS: Answer Only Five (5) Questions, QUESTION ONE (1) IS COMPULSORY.

- 1a. Draw a well labelled poppet valve with at least six (6) parts placed correctly.
 - b. Give full meaning to the abbreviation OHC and OHV engine and state the major difference.
 - c. State the six (6) causes of valve damage.
 - d. Explain the role of a cylinder head.
 - e. An Automobile engine is not starting and is not producing exhaust smoke, state the five (5) possible causes and diagnosis/solution to this fault.
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- 2a. Briefly discuss the construction of a cylinder head including the interior and method of casting.
 - 2b. State five (5) advantages of cam and followers.
 - 2c. discuss a combustion chamber and the various types
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- 3a. With the aid of a neatly labelled sketch, show a plate cam and a wedge cam.
 - 3b. Explain the term "cam" and list the six (6) types of cam.
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- 4a. With the aid of a neatly labelled sketch, show a knife edge follower and a flat faced follower.
 - 4b. Define the term "follower" and list the six (6) types of followers.
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- 5a. In a tabular form, state five (5) automobile engine faults, causes and possible solution each.
 - 5b. List five (5) effects of De-carbonization and five (5) advantages as well.
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- 6a. List the eight (8) main parts involved in the construction of the camshaft and explain three (3).
 - 6b. Cylinder liners are practically used in all diesel engines, explain.