



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

FIRST SEMESTER EXAMINATIONS, NOV/DEC 2018

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COURSE NO: GL 129

COURSE NAME: INTERNAL COMBUSTION ENGINE

CLASS: GD I

TIME: 3 HOURS

Name: _____ Index Number: _____

Answer ALL questions. Your answers should be concise and include diagrams where necessary.

1. What is the difference between an internal combustion and external combustion engines? **[4 marks]**
2. With the aid of simple diagrams describe the operation of the 4-stroke S.I. (spark ignition) engine. **[6 marks]**
3. List two (2) physical differences between an S.I. (spark ignition) engine and a C.I. (compression ignition) engine. **[4 marks]**
4. What are the functions of the following engine components;
 - a. Engine block **[2 marks]**
 - b. Crankshaft **[2 marks]**
 - c. Camshaft **[2 marks]**
 - d. Piston **[2 marks]**
 - e. Cylinder valves **[2 marks]**
5. Considering the compression ratios for S.I. and C.I. engines, which one is higher? Why is that so? **[4 marks]**
6. State two main functions of the lubrication system of an internal combustion engine. Explain each. **[4 marks]**
7. List and state the functions of four components of the lubrication system in an internal combustion engine. **[8 marks]**
8. Describe briefly the differences between an air-cooled and a water-cooled system with respect to the components forming the system. **[6 marks]**
9. Explain briefly the difference between the thermo-siphon and the pressurized types of cooling system. **[5 marks]**
10. List three faults which can develop in an internal combustion engine. State its possible causes and its effects on the engine's performance. **[9 marks]**

Examiner: N. Yakah