



**UNIVERSITI KUALA LUMPUR
Malaysia France Institute**

**FINAL EXAMINATION
JANUARY 2014 SESSION**

SUBJECT CODE : FVD 12503
SUBJECT TITLE : AUTOTRONIC 2
LEVEL : DIPLOMA
TIME / DURATION :
(2 HOURS)
DATE :

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper **CAREFULLY**.
 2. This question paper is printed on both sides of the paper.
 3. Please write your answers on the answer booklet provided.
 4. Answer should be written in blue or black ink except for sketching, graphic and illustration.
 5. This question paper consists of **TWO (2)** sections. Section A and B. Answer all questions in Section A. For Section B, answer **TWO (2)** questions only.
 6. Answer all questions in English.
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THERE ARE 4 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 60 marks)

INSTRUCTION: Answer ALL questions.

Please use the answer booklet provided.

Question 1

- a. Dwell angle is the number of degrees the cam rotates from the time the points close until they open again Explain the effect of dwell angle for engine performance in ignition system.

(4 marks)

Question 2

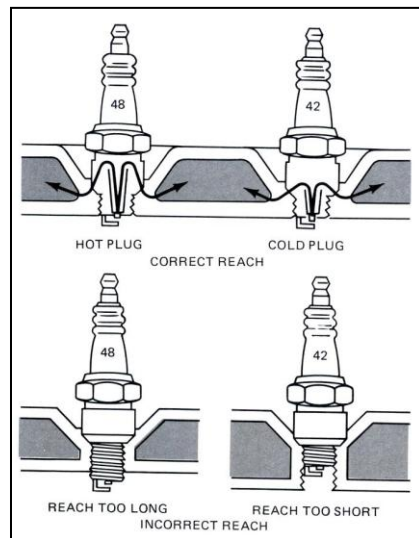


Figure 1: Heat range and reach of the spark plug

Refer to the Figure 1, discuss the differences between spark plug heat range and spark plug reach affected onto engine operation. (10 marks)

Question 3

- a. Explain the operational of conventional system and list all the major components with an aid of basic wiring diagram.

(10 marks)

Question 4

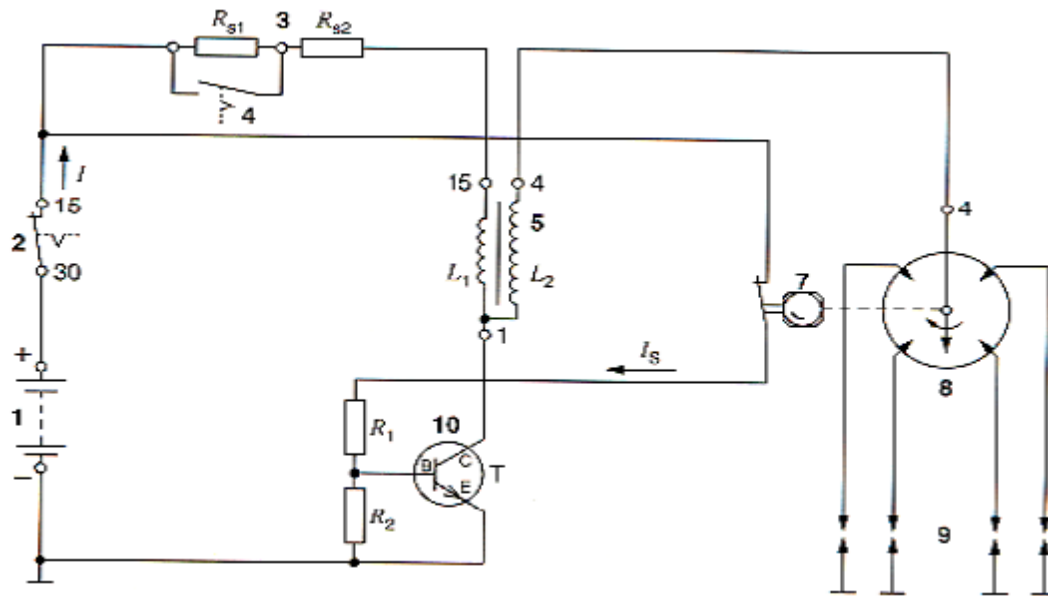


Figure 2: Breaker-triggered transistorized ignition circuit (TI-B)

- a. List **TWO (2)** advantages of Breaker-Triggered Transistorized Ignition (TI-B). (4 marks)
- b. Describe the operating principle of TI-B ignition system by referring the circuit diagram in Figure 2. (6 marks)

Question 5

Describe the mechanism below:

- i. Vacuum advance timing (5 marks)
- ii. Centrifugal advance timing (5 marks)

Question 6

- a. Explain the operational of Transistorized Ignition with Hall Generator (TI-H) compare to conventional ignition system. (10 marks)
- b. Give **THREE (3)** advantages of Transistorized Ignition with Hall-Effect. (6 marks)

SECTION B (Total: 40 marks)

INSTRUCTION: Answer TWO (2) questions only.

Question 7

- a. Differentiate the conventional ignition system with breaker-triggered transistorized ignition system with complete circuit diagram. (20 marks)

Question 8

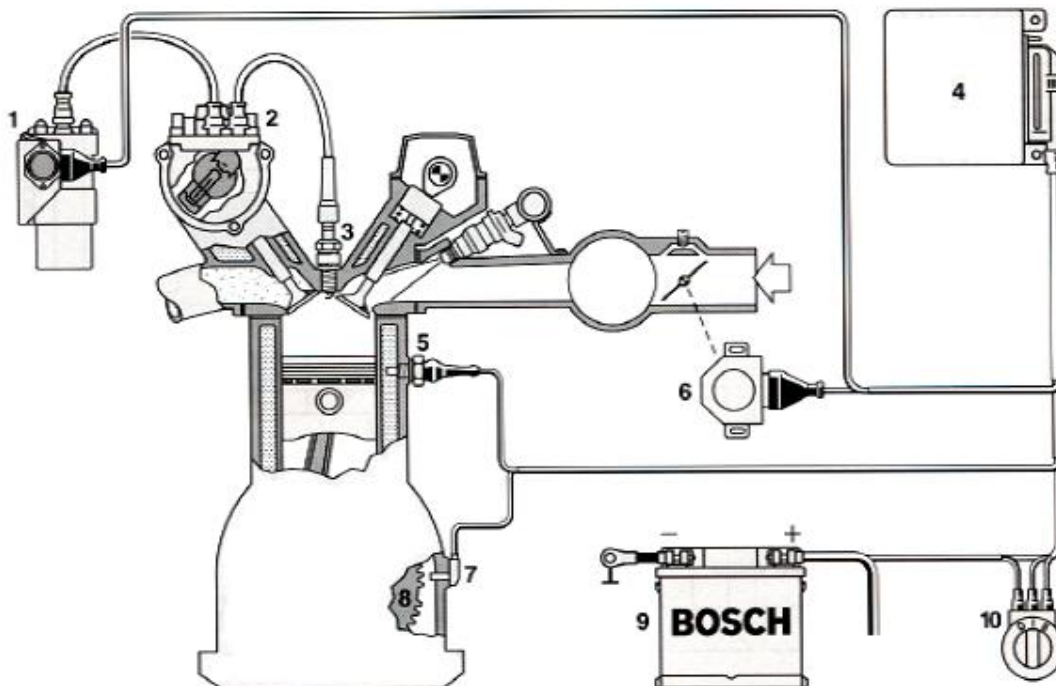


Figure 3: Fully Electronic Ignition System

- a. State all the components and describe function of each of the components. (10 marks)
- b. Identify all the sensors according to their group and state the functions and signal output each of sensor. (10 marks)

Question 9

- a. Explain what is BSI and state 3 of its function? (10 marks)
- b. Describe the Vehicle Area Network (VAN) and Controlled Area Network (CAN) for multiplexing system. (10 marks)

END OF QUESTIONS