



**UNIVERSITI KUALA LUMPUR  
Malaysia France Institute**

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**FINAL EXAMINATION  
JANUARY 2014 SESSION**

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**SUBJECT CODE** : FVD 11203  
**SUBJECT TITLE** : AUTOTRONIC 1  
**LEVEL** : DIPLOMA  
**TIME / DURATION** :  
( 2 HOURS )  
**DATE** :

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**INSTRUCTIONS TO CANDIDATES**

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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.**

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**SECTION A (Total: 60 marks)****INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 1**

- a. Explain the following term clearly
- i. Substance (2 marks)
  - ii. Element. (2 marks)
  - iii. Current (2 marks)
  - iv. Voltage (2 marks)
  - v. Resistance (2 marks)

**Question 2**

- a. Define each term below and give **TWO (2)** examples of each item.
- i. Insulators (3 marks)
  - ii. Semiconductors (3 marks)
  - iii. Conductors (3 marks)

**Question 3**

- a. Discuss the construction of battery (5 marks)
- b. List **FIVE (5)** preventive maintenances that are normally needed for battery to extend life span (5 marks)

**Question 4**

- a. Draw a complete circuit of ignition system and **EXPLAIN** briefly the operation of ignition system (10 marks)

**Question 5**

- a. List **FIVE (5)** major components in primary and secondary circuit. Explains the functions of listed components. (10 marks)

**Question 6**

- a. Explain why alternator is important to the vehicle. Discuss **TWO (2)** of them.  
(5 marks)
- b. List **THREE (3)** factors that determine the output voltage generated by alternator.  
(6 marks)

**SECTION B (Total: 40 marks)**

**INSTRUCTION: Answer TWO (2) questions.**  
**Please use the answer booklet provided.**

**Question 7**

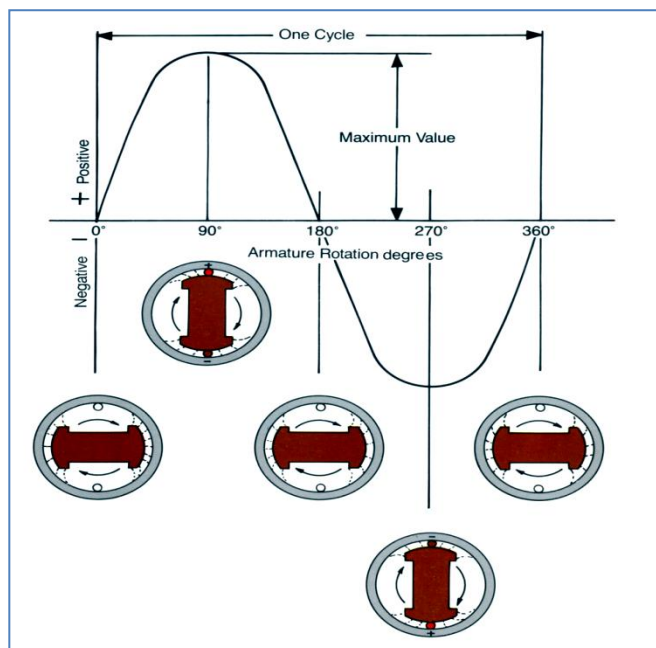
- a. Explain the method used in testing the functionality of starter motor. (15 marks)
- b. With a simple diagram, explain operating principle of starter motor. (5 marks)

**Question 8**

- a. Differentiate the charging process and discharging process for a battery which is in good condition. (20 marks)

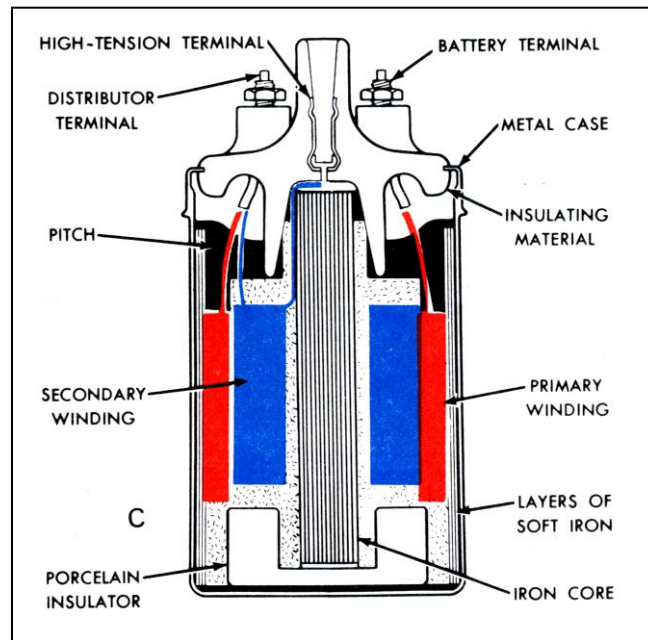
**Question 9**

- a. Refer to Figure 1 below; explain in brief clearly the alternate (AC) wave formation generated by alternator. (20 marks)



*Figure 1: Alternate Wave Form*

Question 10



*Figure 2: Ignition coil*

- a. With the help of the Figure 2, explain the different types of constructed winding inside the ignition coil, and state the differences.

(20 marks)

**END OF QUESTION**