CONFIDENTIAL

SET A

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION

JULY 2010 SESSION

SUBJECT CODE	:	FCD10202
SUBJECT TITLE	:	RAC AND ELECTRICITY
LEVEL	:	DIPLOMA
TIME / DURATION	:	9.00am – 11.00am (2 HOURS)
DATE	:	19 NOVEMBER 2010

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) question only.

6. Answer all questions in English.

THERE ARE 5 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 60 marks)

INSTRUCTION: Answer ALL questions.

Please use the answer booklet provided.

Question 1

a)   What do you understand about the resistance?

(2 marks)

b)   Find the total resistance for Diagram Q1(b) below
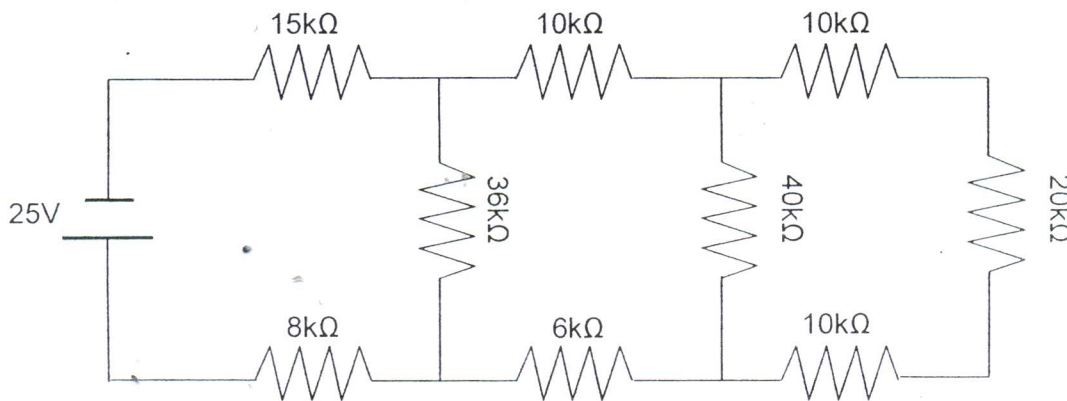

Diagram Q1(b)

(8 marks)

c)   What is the Ohm's Law and give the expression?

(2 marks)

d)   By apply the Ohm's Law, from Diagram Q1(d) below, find

    i)   Total voltage, V_T

(4 marks)

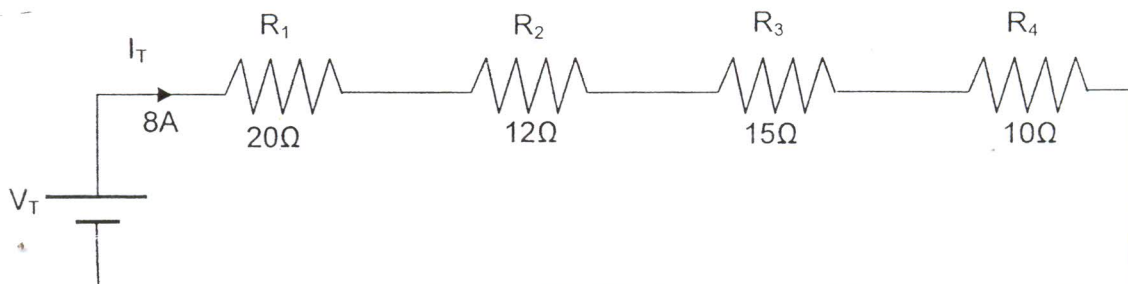   ii)   Voltage drop at each resistor.

(4 marks)

Diagram Q1(d)

Question 2

a)   The secondary transformer is connected across the motors of three toy train in parallel. Motor 1 has resistance 40Ω and draws 0.4A. Motor 2 has a resistance of 50Ω and motor 3 draws a current of 0.5A. Find

      i)   Total Voltage, V

(2 marks)

      ii)   Total Current, A

(2 marks)

      iii)   Total Resistance, Ω

(2 marks)

b)   Three buzzers are wired in parallel. They draw currents of 0.2, 0.4 and 0.6A respectively. If the total resistance is 6Ω, by draw a circuit diagram for the buzzer determine

      i)   Voltage across at each buzzer, V

(8 marks)

      ii)   The resistance of each buzzer, Ω

(3 marks)

      iii)   Power dissipate at each buzzer, W

(3 marks)

Question 3

a)   Explain briefly the following law:

      i)   Kirchhoff's Current Law (KCL)

(2 marks)

      ii)   Kirchhoff's Voltage Law (KCL)

(2 marks)

b)   From circuit Diagram Q3(b) below, find

    i)   Total current across the circuit

                                                                                (8 marks)
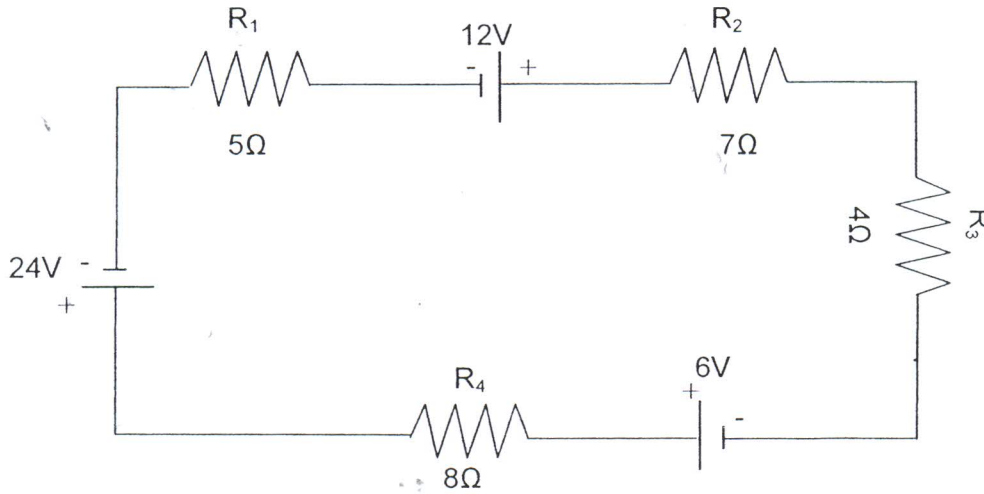
    ii)   Voltage drop and power dissipate at each resistor

                                                                                (8 marks)

Diagram Q3(b)

SECTION B (Total: 40 marks)

INSTRUCTION: Answer TWO (2) question only
Please use the answer booklet provided.

Question 4

a)   Explain 3 differences between DC and AC Voltage

                                                                                (6 marks)

b)   The electronic radio which use an alternate voltage source has been analyze the signal in the laboratory, the signal shows that the maximum current produce from the electronic radio is 2A with the frequency of 50Hz. Sketch the electronic radio wave signal and determine:

    i)   Peak Current

                                                                                (6 marks)

    ii)   Peak-Peak Current

                                                                                (2 marks)

    iii)   RMS Current

                                                                                (2 marks)

    iv)   Current during the period is 0.012s

                                                                                (4 marks)

Question 5

a)   By apply Kirchhoff's Current Law (KCL) and Kirchhoff's Voltage Law (KVL), from below Diagram Q5(a) determine

   i)   Values of I_2, I_3, I_5

   (14 marks)

   ii)   Voltage drop at R_2, R_3, R_5
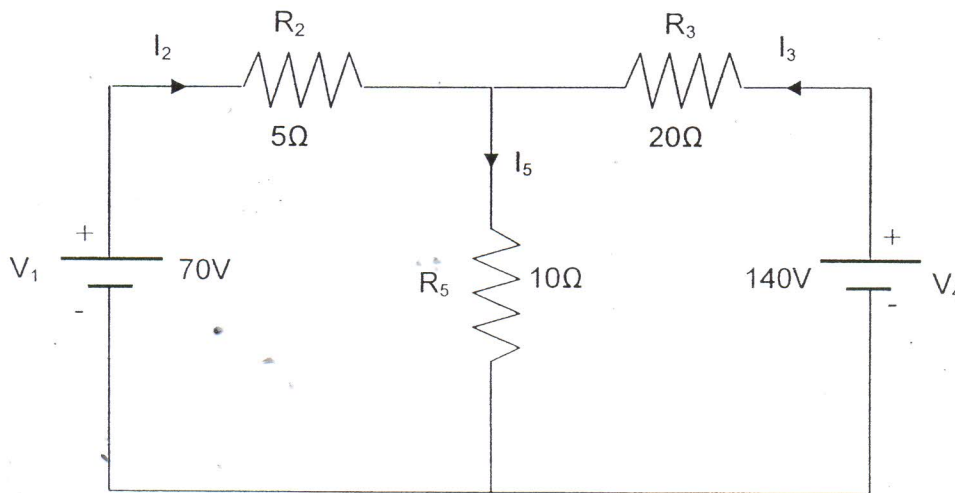
   (6 marks)

Diagram Q5(a)

Question 6

a)   List 5 techniques which electricity can be produced and explain briefly the technique.

   (10 marks)

b)   Explain briefly the 3-phase electricity by sketch the schematic diagram

   (7 marks)

c)   List 3 advantages of 3-phase electricity compare to single phase system?

   (3 marks)

END OF QUESTION