

INSTRUCTION:

This section consists of **FOUR (4)** questions. Answer **ALL** questions.

ARAHAN:

Bahagian ini mengandungi **EMPAT (4)** soalan. Jawab **SEMUA** soalan.

QUESTION 1**SOALAN 1**

- CLO1 (a) Define Simple Circuit.
Takrifkan Litar Ringkas.

[4 marks]

[4 markah]

- CLO1 (b) Approximate the value of the following entities based on the circuit in Diagram 1(b).
Anggarkan nilai entiti-entiti berikut dengan merujuk kepada litar pada Rajah 1(b).

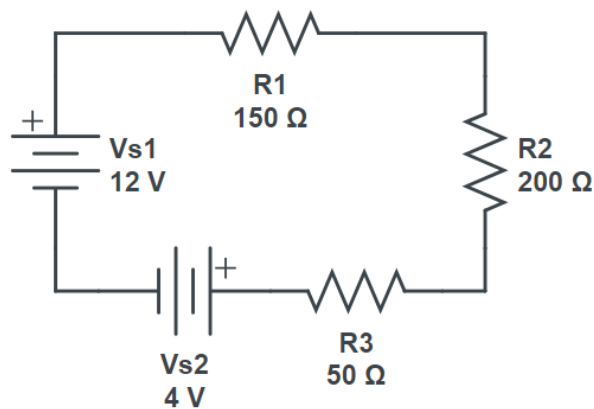


Diagram 1(b) / Rajah 1(b)

- (i) The Total Resistance, R_T .
Jumlah Rintangan, R_T .

[2 marks]

[2 markah]

- (ii) The current at R3, I_{R3} .

Arus pada R3, I_{R3} .

[3 marks]

[3 markah]

- (iii) The power at R1, P_{R1} .

Kuasa pada R1, P_{R1} .

[3 marks]

[3 markah]

- CLO1 (c) Calculate current I_1 , I_2 dan I_3 based on the circuit given in Diagram 1 (c) using the Kirchhoff's Law method.

Kira arus I_1 , I_2 dan I_3 dengan merujuk kepada Rajah 1 (c), dengan menggunakan kaedah Hukum Kirchhoff.

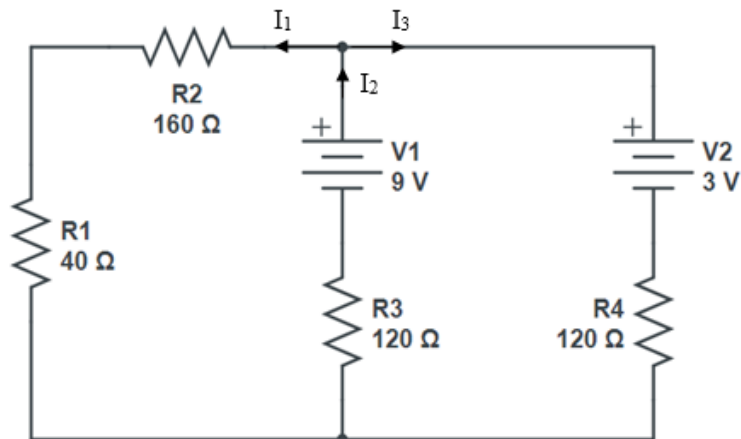


Diagram 1 (c) / Rajah 1 (c)

[13 marks]

[13 markah]

QUESTION 2

SOALAN 2

CLO1

- (a) Describe Capacitor.

Terangkan Kapasitor.

[3 marks]

[3 markah]

CLO1

- (b) Series-parallel circuit is a circuit that combine series and parallel connection. The diagram below shows capacitor and inductor connection in series-parallel. *Litar sesiri-selari adalah litar yang menggabungkan sambungan sesiri dan selari. Rajah di bawah menunjukkan litar sesiri-selari bagi kapasitor dan inductor.*

- (i) Approximate the Total Capacitance, C_T for circuit in Diagram 2 (b) (i). *Anggarkan Jumlah Kapasitan, C_T bagi litar di Rajah 2 (b) (i).*

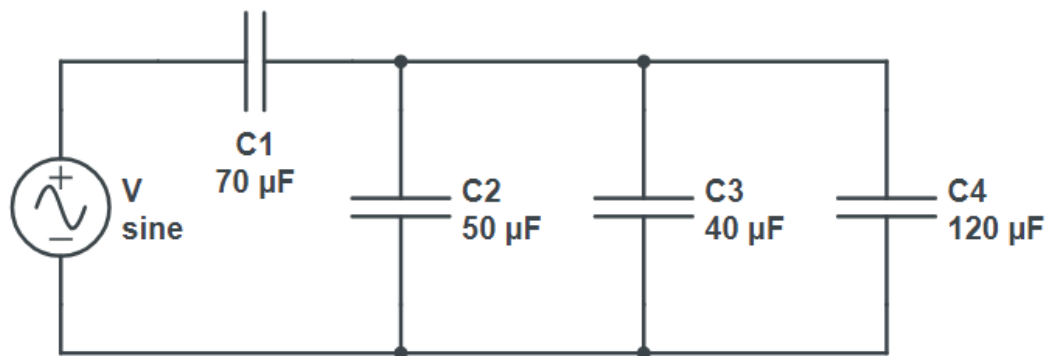


Diagram 2 (b) (i) / Rajah 2 (b) (i)

[5 marks]

[5 markah]

- (ii) Approximate the Total Inductance, L_T for circuit in Diagram 2 (b) (ii).
 Anggarkan Jumlah Induktan, L_T bagi litar di Rajah 2 (b) (ii).

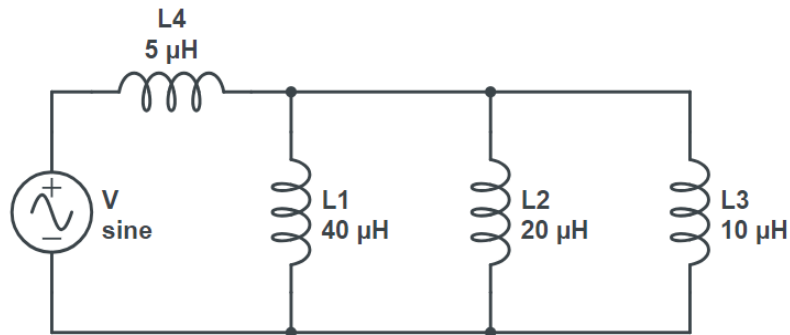


Diagram 2 (b) (ii) / Rajah 2 (b) (ii)

[6 marks]

[6 markah]

- CLO1 (c) Refer to Diagram 2 (c) below.
 Rujuk Rajah 2 (c) di bawah.

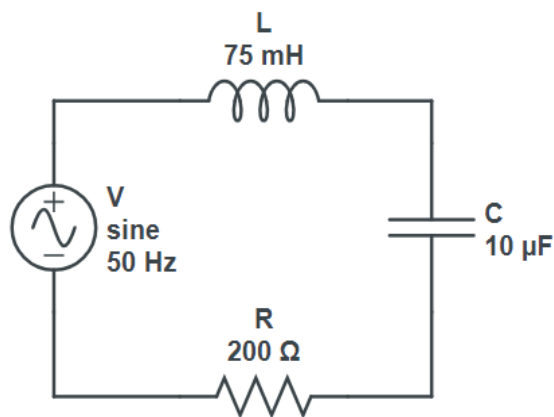


Diagram 2 (c) / Rajah 2 (c)

- (i) Calculate the Impedance, Z .
 Kira Galangan, Z .

[9 marks]

[9 markah]

- (ii) Sketch the Impedance Triangle with complete labeling.
 Lakarkan Segitiga Galangan yang lengkap berlabel.

[2 marks]

[2 markah]

QUESTION 3**SOALAN 3**

CLO1

- (a) State **TWO (2)** methods to determine the direction of the magnetic field produced by the current in the solenoid.

Nyatakan DUA (2) kaedah untuk menentukan arah medan magnet yang dihasilkan oleh arus dalam solenoid.

[4 marks]

[4 markah]

CLO1

- (b) Explain Right Hand Grip Rule with the aid of a suitable diagram.

Terangkan Hukum Genggaman Tangan Kanan dengan bantuan rajah yang sesuai.

[9 marks]

[9 markah]

CLO1

- (c) A current of 24 mA is passing through a 1000 turns coil wound with an average diameter of 955 mm.

Suatu arus 24 mA melalui satu gegelung yang mempunyai 1000 lingkaran dengan jejari purata 955 mm.

- (i) Calculate average length, ℓ .

Kira panjang purata, ℓ .

[4 marks]

[4 markah]

- (ii) Calculate Magnetomotive Force, F_m .

Kira Kuasa Magnetomotif, F_m .

[4 marks]

[4 markah]

- (iii) Calculate Magnetic Field Strength, H .

Kira Kekuatan Medan Magnet, H .

[4 marks]

[4 markah]

QUESTION 4**SOALAN 4**

CLO1

- (a) Label part P, Q, R and S in the Diagram 4 (a).

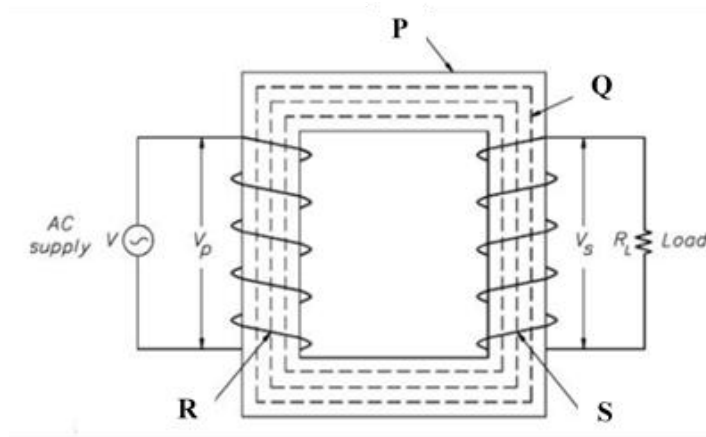
Labelkan bahagian P, Q, R dan S pada Rajah 4 (a).

Diagram 4 (a) / Rajah 4 (a)

[4 marks]

[4 markah]

CLO1

- (b) Compare Isolation Transformer to Step-Up Transformer using suitable diagram.
Bandingkan Pengubah Pemisah dengan Pengubah Langkah-Naik menggunakan rajah yang sesuai.

[10 marks]

[10 markah]

CLO1

- (c) A 5000/250 V, 10 kVA transformer has 100 turns in the secondary winding. By neglecting the losses,
Sebuah Pengubah 5000/250 V, 10 kVA mempunyai 100 lilitan sekunder. Dengan menganggap tiada kehilangan,

- (i) calculate the Primary Current, I_p and Secondary Current, I_s .
kira Arus Utama, I_p dan Arus Sekunder, I_s .

[5 marks]

[5 markah]

- (ii) calculate Primary Turns, N_p and Expected Ratio, K .
kira Lilitan Utama, N_p dan Nisbah Terjangka, K .

[4 marks]

[4 markah]

- (iii) write the type of Transformer.
tuliskan jenis Pengubah.

[2 marks]

[2 markah]

SOALAN TAMAT