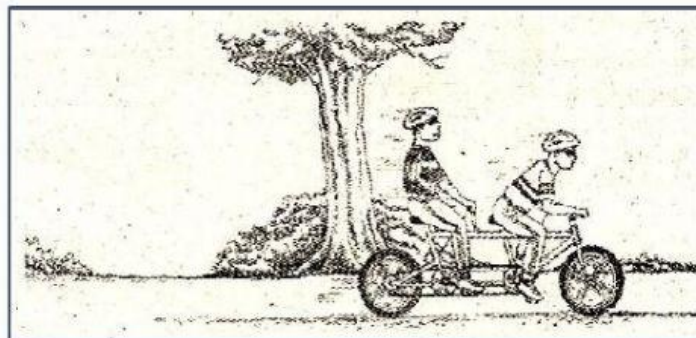


- 5 Rajah 5.1 menunjukkan dua penunggang mengayuh basikal dan tiba pada jarak yang ditunjukkan dalam masa 3 saat.

Rajah 5.2 menunjukkan hanya seorang penunggang sedang mengayuh basikal dan tiba pada jarak yang sama dalam masa 7 saat.

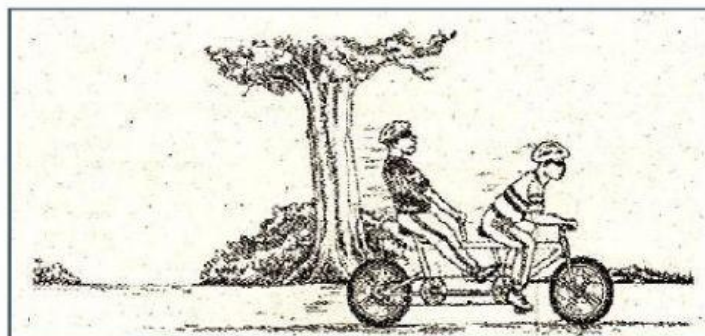
Diagram 5.1 shows two cyclists cycling the bicycle and reached the distance shown in 3 seconds.

Diagram 5.2 shows only one of the cyclists cycling the bicycle and reached the same distance in 7 seconds.



Rajah 5.1

Diagram 5.1



Rajah 5.2

Diagram 5.2

- (a) Namakan daya yang bertindak di antara tayar basikal dengan jalan raya.
Name the force which acted between the bicycle tyre and the road.

[1 markah]

[1 mark]

(b) Perhatikan Rajah 5.1 dan Rajah 5.2.

Observe Diagram 5.1 and Diagram 5.2.

- (i) Bandingkan daya yang dikenakan oleh penunggang basikal yang menyebabkan basikal bergerak ke depan.

Compare the forces applied by the cyclists that cause the bicycle to move forward.

.....

[1 markah]

[1 mark]

- (ii) Bandingkan masa yang diambil untuk bergerak pada jarak yang sama.

Compare the time taken to travel the same distance.

.....

[1 markah]

[1 mark]

- (iii) Berdasarkan jawapan anda di 5(b)(ii), bandingkan pecutan basikal itu.

Based on the answer in 5(b)(ii), compare the acceleration of the bicycle.

.....

[1 markah]

[1 mark]

- (iv) Hubungkait daya yang dikenakan oleh penunggang basikal dengan pecutan basikal itu.

Relate the forces applied by the cyclist to the acceleration of the bicycle.

.....

[1 markah]

[1 mark]

- (c) Namakan hukum fizik yang terlibat dalam 5(b)(iv).

Name the physics law involved in 5(b)(iv).

.....

[1 markah]

[1 mark]

- (d) (i) Apakah yang terjadi pada pecutan basikal dalam Rajah 5.1 apabila kedua-dua penunggang basikal itu membongkok ke hadapan?

What happen to the acceleration of bicycle in Diagram 5.1 when both cyclists bend their bodies forward?

[1 markah]

[1 mark]

- (ii) Beri sebab bagi jawapan anda di 5(d)(i).

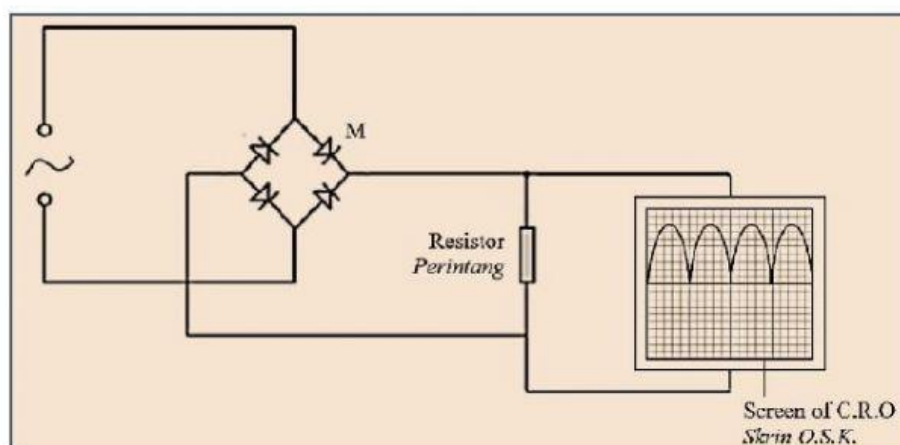
Give reasons for your answer in 5(d)(i).

[2 markah]

[2 marks]

- 6 Rajah 6.1 menunjukkan satu susunan komponen elektronik yang disambungkan kepada satu Osiloskop Sinar Katod (O.S.K.). Satu corak gelombang telah terhasil di atas skrin O.S.K.

Diagram 6.1 shows an arrangement of electronic components that are connected to a Cathode Ray Oscilloscope (C.R.O.). A wave pattern is produced on the screen of the C.R.O.



Rajah 6.1

Diagram 6.1

- (a) Namakan komponen elektronik berlabel M.

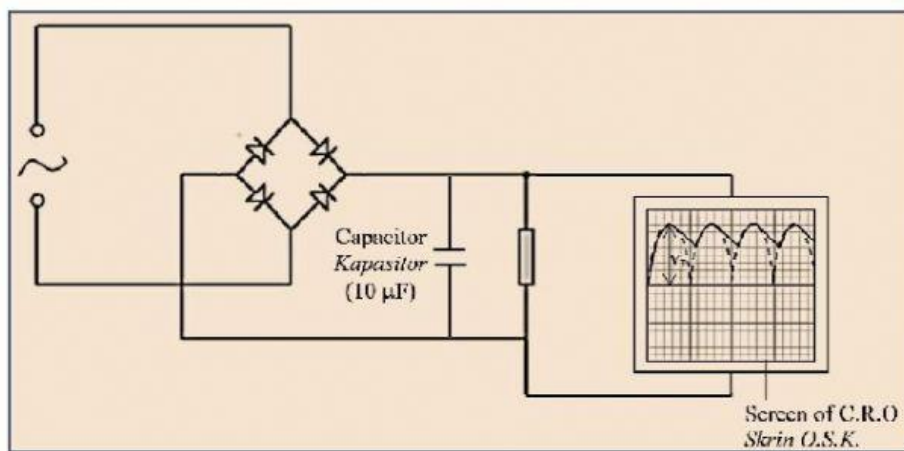
Name the electronic component labelled M.

[1 markah]

[1 mark]

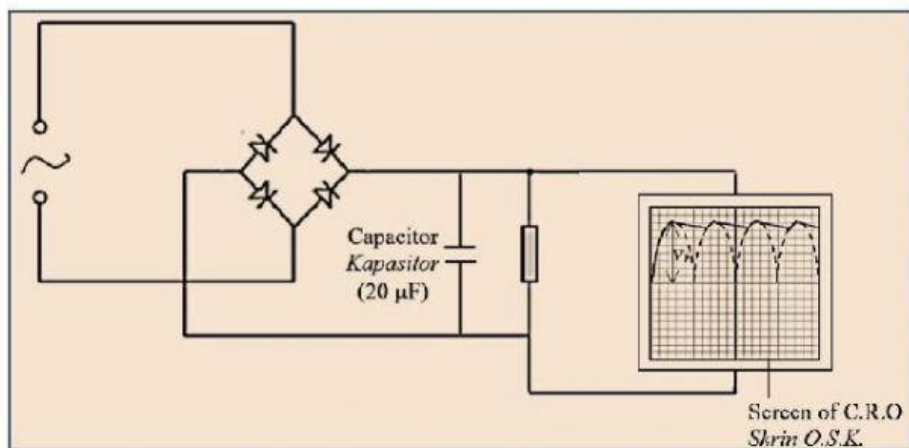
- (b) Rajah 6.2 dan Rajah 6.3 menunjukkan corak gelombang di atas skrin O.S.K. apabila satu kapasitor dengan kapasitan $10\ \mu\text{F}$ dan $20\ \mu\text{F}$ disambung kepada litar masing-masing.

Diagram 6.2 and Diagram 6.3 show the wave pattern on the C.R.O. screen when a capacitor with capacitance of $10\ \mu\text{F}$ and $20\ \mu\text{F}$ is connected to the circuit respectively.



Rajah 6.2

Diagram 6.2



Rajah 6.3

Diagram 6.3

Berdasarkan Rajah 6.2 dan Rajah 6.3.

Based on Diagram 6.2 and Diagram 6.3.

- (i) Bandingkan nilai kapasitan bagi kapasitor.

Compare the capacitance of the capacitor.

.....

[1 markah]

[1 mark]

- (ii) Bandingkan kerataan corak gelombang di atas skrin O.S.K.

Compare the smoothness of wave pattern on the C.R.O. screen.

.....

[1 markah]

[1 mark]

- (iii) Bandingkan magnitud voltan puncak, V_P .

Compare the magnitude of peak voltage, V_P .

.....

[1 markah]

[1 mark]

- (iv) Hubungkait kapasitan bagi kapasitor dengan kerataan corak gelombang.

Relate the capacitance of the capacitor and the smoothness of wave pattern.

.....

[1 markah]

[1 mark]

- (c) Namakan jenis rektifikasi yang berlaku.

Name the type of rectification occurs.

.....

[1 markah]

[1 mark]

- (d) Terangkan bagaimana kapasitor boleh meratakan voltan output.
Explain how the capacitor smoothen the output voltage.

.....

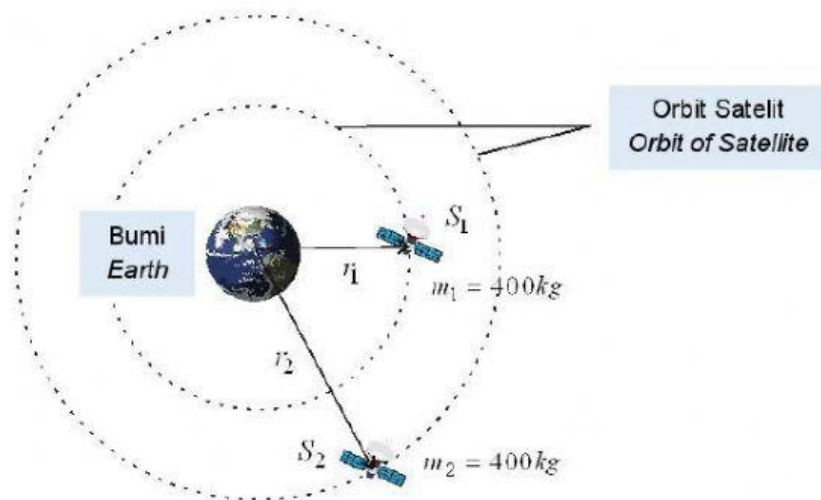
.....

.....

.....

[3 markah]
 [3 marks]

- 7 Rajah 7 menunjukkan dua satelit dan berjisim sama mengelilingi bumi.
Diagram 7 shows two satellites and of the same mass evolve around the earth.



Rajah 7
 Diagram 7

- (a) Jisim adalah kuantiti

Mass is a quantity.

[1 markah]
 [1 mark]

(b) Berdasarkan Rajah 7,
Based on Diagram 7,

- (i) Bandingkan jisim satelit m_1 dan m_2
Compare the mass of satellite m_1 and m_2 .

.....

[1 markah]

[1 mark]

- (ii) Bandingkan jejari orbit bagi satelit r_1 dan r_2 .
Compare the orbital radius of satellite r_1 and r_2 .

.....

[1 markah]

[1 mark]

- (iii) Bandingkan tempoh orbit bagi satelit S_1 dan S_2 .
Compare the orbital period of satellite S_1 and S_2 .

.....

[1 markah]

[1 mark]

- (iv) Nyatakan hubungan antara jejari orbit dan tempoh orbit.
State the relationship between orbital radius and orbital period.

.....

[1 markah]

[1 mark]

- (c) Nyatakan hukum yang terlibat dalam 7(b)(iv).
State the law involved in 7(b)(iv).

.....

[1 markah]

[1 mark]

- (d) (i) Apakah yang terjadi kepada tempoh orbit jika jisim satelit S_1 ditambah?
What happen to the orbital period if the mass is satellite S_1 is increased?

[1 markah]

[1 mark]

- (ii) Terangkan jawapan anda di 7(d)(i).
Explain your answer in 7(d)(i).

[2 markah]

[2 marks]

- 8 Jadual 8 menunjukkan tiga jenis kualiti dan ciri-cirinya.
Table 8 shows three types of pan and their characteristics.

Jenis kualiti dan jisim <i>Type of pan and mass</i>	Muatan haba tentu / $\text{J kg}^{-1}\text{C}^{-1}$ <i>Specific heat capacity / $\text{J kg}^{-1}\text{C}^{-1}$</i>
 2.2 kg Tembaga / Copper	387
 2.5 kg Besi / Iron	500