

KERTAS 1 / PAPER 1

[40 MARKAH / 40 MARKS]

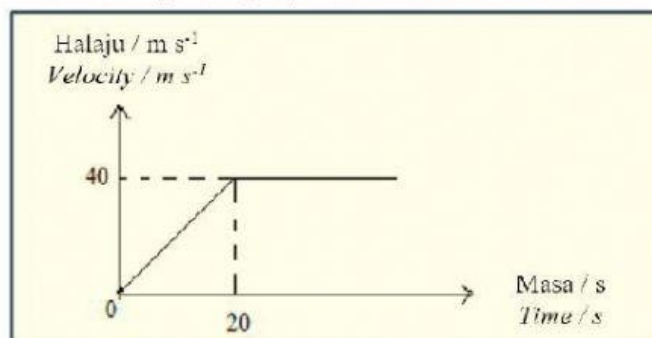
- 1 Suhu dan tenaga boleh dikelaskan sebagai
Temperature and energy can be classified as

- | | |
|--|---|
| A kuantiti asas
<i>base quantities</i> | C kuantiti skalar
<i>scalar quantities</i> |
| B kuantiti terbitan
<i>derived quantities</i> | D kuantiti vektor
<i>vector quantities</i> |

- 2 Antara kuantiti fizik berikut, yang manakah **bukan** kuantiti terbitan?
*Which of the following physical quantities is **not** a derived quantity?*

- | | |
|---------------------------------|------------------------------|
| A Frekuensi
<i>Frequency</i> | C Halaju
<i>Velocity</i> |
| B Jisim
<i>Mass</i> | D Tekanan
<i>Pressure</i> |

- 3 Rajah 1 menunjukkan graf halaju-masa bagi sebuah kereta yang bermula dari keadaan pegun.
Diagram 1 shows a velocity-time graph of a car that accelerates from rest.



Rajah 1

Diagram 1

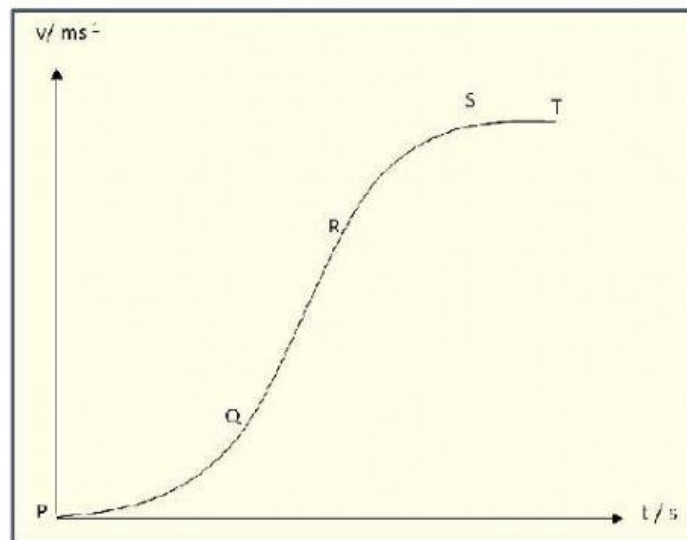
Berapa jauhkan kereta itu bergerak sebelum ia mencapai halaju seragam?

How far does the car travel before it reaches a constant velocity?

- A 200 m B 400 m C 600 m D 800 m

- 4 Rajah 2 menunjukkan graf halaju – masa bagi sebuah kereta.

Diagram 2 shows a velocity – time graph of a car.



Rajah 2

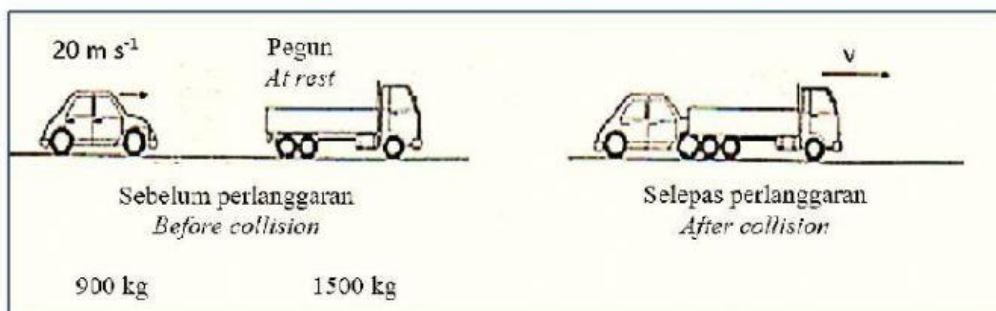
Diagram 2

Pada bahagian manakah menunjukkan pecutan kereta itu adalah sifar ?

Which part shows the acceleration of the car is zero?

- A PQ B PR C QS D ST

- 5** Rajah 3 menunjukkan suatu pelanggaran tak kenyal.
Diagram 3 shows an inelastic collision.



Rajah 3
Diagram 3

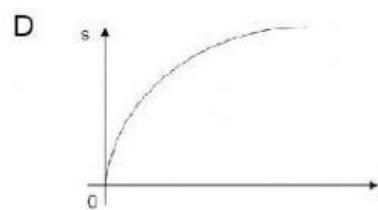
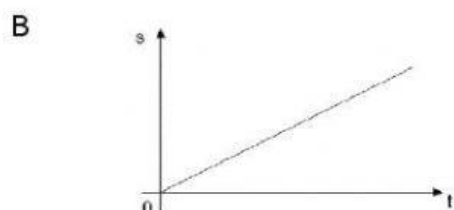
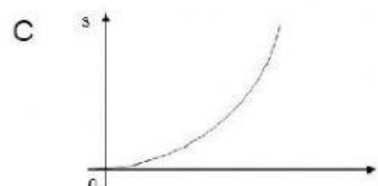
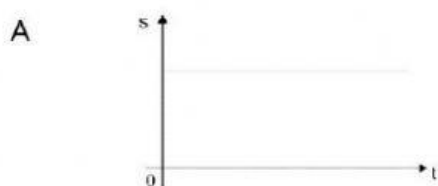
Berapakah halaju kedua-dua kenderaan selepas perlanggaran?

What is the velocity of both vehicles after collision?

- | | | | |
|---|------------------------|---|-------------------------|
| A | 1.3 m s^{-1} | C | 7.5 m s^{-1} |
| B | 2.5 m s^{-1} | D | 10.0 m s^{-1} |

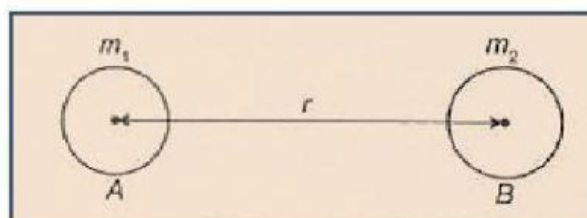
- 6** Manakah antara graf-graf sesaran melawan masa yang berikut mewakili pergerakan suatu objek yang sedang bergerak dengan pecutan seragam?

Which of the following displacement against time graphs represents the motion of an object moving at constant acceleration?



- 7 Rajah 4 menunjukkan dua jasad A dan B dengan jisim m_1 dan m_2 masing-masing. Jarak antara pusat keduanya ialah r dan daya graviti ialah F .

Diagram 4 shows two object A and B with mass m_1 and m_2 respectively. The distance between center of the objects is r and the gravitational force is F .



Rajah 4

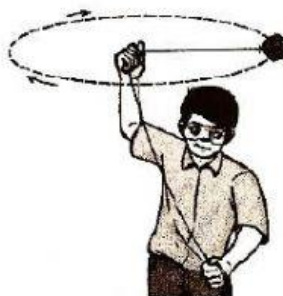
Diagram 4

Daya F akan berkurang sekiranya

F will decrease if

- | | | | |
|---|------------------------------------|---|--------------------------------|
| A | m_1 bertambah
m_1 increases | C | r bertambah
r increases |
| B | m_2 bertambah
m_2 increases | D | r berkurang
r decreases |
- 8 Rajah 5 menunjukkan seorang budak lelaki memusingkan seketul batu secara mengufuk.

Diagram 5 shows a boy whirling a stone horizontally.



Rajah 5

Diagram 5

Apakah yang berlaku kepada batu itu jika benang putus secara tiba-tiba?

What happen to the stone if the string suddenly breaks?

- A Berpusing menjauhi budak lelaki itu.
Spiral away from his hand.
- B Terbang terus menjauhi budak lelaki itu.
Fly directly away from the boy.
- C Terbang terus mendekati budak lelaki itu.
Fly directly towards the boy.
- D Terbang mengikut garis tangen lintasan bulatan.
Fly off and follow th tangent to its circular path.

9 Antara berikut yng manakah benar mengenai satelit geopegun?

Which of the following is true about geostationary satellite?

- I Ia bergerak dalam arah yang sama dengan putaran bumi.
It moves in the direction of the earth orbit.
- II Tempohnya putarannya satu hari.
Its period of rotation is one day.
- III Orbitnya sentiasa atas Khatulistiwa Bumi.
Its orbit always above the Earth Equator.
- IV Ia tidak mengalami sebarang tarikan graviti.
It does not experience any gravitational pull.

A I,II dan III sahaja
I, II and III only

C IV sahaja
IV only

B I dan III sahaja
I and III only

D II dan IV sahaja
II and IV only

- 10 Rajah 6 menunjukkan susu sejuk dituangkan ke dalam kopi panas.
Diagram 6 shows cold milk being poured into hot coffee.



Rajah 6
Diagram 6

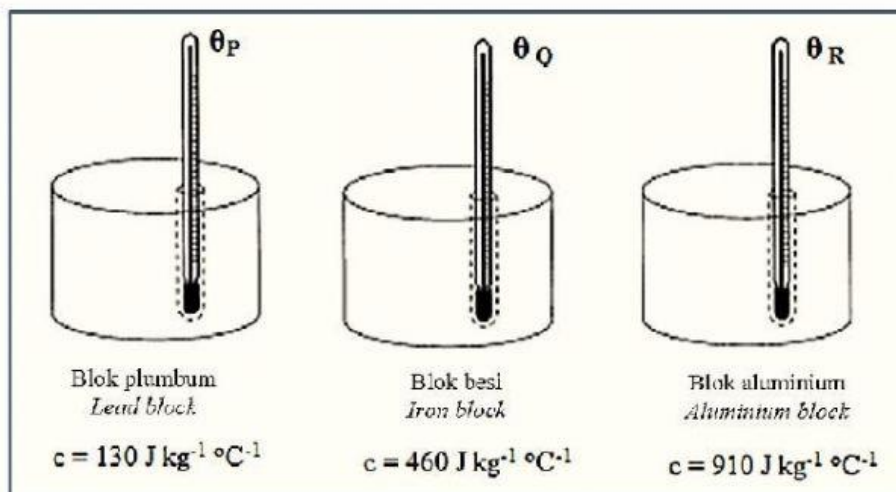
Pernyataan manakah yang betul apabila campuran itu berada dalam keadaan keseimbangan terma?

Which statement is correct when the mixture is at the thermal equilibrium?

- A Suhu campuran itu lebih rendah daripada suhu susu sejuk
Temperature of mixture is lower than cold milk
- B Suhu campuran itu lebih tinggi daripada suhu kopi panas
Temperature of mixture is higher than hot coffee
- C Kadar pemindahan haba susu sejuk adalah lebih rendah daripada kopi panas
Net rate of heat transfer of the cold milk is lower than the hot coffee
- D Kadar pemindahan haba bersih antara susu sejuk dan kopi panas adalah sifar
Net rate of heat transfer between the cold milk and the hot coffee is zero

- 11 Rajah 7 menunjukkan satu blok plumbum, satu blok besi dan satu blok aluminium. Semua blok itu mempunyai jisim dan suhu awal yang sama dan dibiarkan menyejuk. Ketiga-tiga logam itu mempunyai muatan haba tentu, c yang berbeza. Selepas 15 minit suhu ketiga-tiga logam itu di rekodkan.

Diagram 7 shows a lead block, an iron block and aluminium block. All the blocks have the same mass and same initial temperature and are left to cool. All the blocks have different specific heat capacity, c . After 15 minutes the temperature of the blocks are recorded.



Rajah 7
Diagram 7

Perbandingan yang manakah betul tentang suhu bagi blok plumbum, θ_P , blok besi, θ_Q , dan blok aluminium, θ_R ?

Which comparison is correct about the temperature of lead block, θ_P , iron block, θ_Q , and aluminium block, θ_R is correct?

- A $\theta_P > \theta_Q > \theta_R$
- B $\theta_Q > \theta_P > \theta_R$
- C $\theta_R > \theta_P > \theta_Q$
- D $\theta_R > \theta_Q > \theta_P$