Penyelesaian Lengkap

PRAKTIS 7

Kertas 1

1 Tempoh masa/*duration* = (1.5 – 1.0) jam/*hour*
= 0.5 × 60 minit/*minutes*
= 30 minit/*minutes*

Jawapan/*Answer*: **C**

2 Laju Anisah/*Anisah's speed*
= Kecerunan *OK*/*Gradient of OK*

$$= \frac{12 \text{ km}}{(10 \div 60) \text{ j/h}}$$

= 72 km j^{-1}/km h^{-1}
Laju Nini/*Nini's speed*
= Magnitud kecerunan *JL*
Magnitude of gradient JL

$$= \frac{12 \text{ km}}{(30 \div 60) \text{ j/h}}$$

= 24 km j^{-1}/km h^{-1}
Beza laju/*Difference in speed*
= (72 – 24) km j^{-1}/km h^{-1}
= 48 km j^{-1}/km h^{-1}

Jawapan/*Answer*: **B**

3 Laju/*Speed of OJ* $= \frac{3 \text{ km}}{(10 \div 60) \text{ j/h}}$
= 18 km j^{-1}/km h^{-1}
1230 – 1110 = 0120
= (60 + 20) min
= 80 min
Laju/*Speed of KL* $= \frac{7 - 3 \text{ km}}{(80 \div 60) \text{ j/h}}$
= 3 km j^{-1}/km h^{-1}
Laju purata/*Average speed* $= \frac{7 \text{ km}}{(2 \text{ j/h})}$
= 3.5 km j^{-1}/km h^{-1}

Jawapan/*Answer*: **C**

4 Graf *OPQ* menunjukkan bahawa Lily berhenti selepas berlari 80 m manakala Yasmin dan Mei berhenti selepas bergerak 100 m. Lily mendapat tempat ketiga.
The graph of OPQ shows that Lily stopped after running 80 m *while Yasmin and Mei stopped after running* 100 m. *Lily got* 2nd *runner up.*

Jawapan/*Answer*: **A**

5 Laju purata/*Average speed* $= \frac{100 \text{ m}}{25 \text{ s}}$
= 4 m s^{-1}

Jawapan/*Answer*: **D**

6 $60 \times \frac{7 - 3}{60} = \frac{1}{3}\left[\frac{1}{2} \times (60 + v) \times \frac{15 - 7}{60}\right]$

$$4 = \frac{1}{45} \times (60 + v)$$

$$4(45) = 60 + v$$

$$v = 180 - 60$$

$$= 120$$

Jawapan/*Answer*: **D**

7 Jumlah jarak/*Total distance*

$$= \frac{1}{2} \times (15 + 10 - t) \times 8$$

$$88 = (25 - t) \times 4$$

$$4t = 100 - 88$$

$$= 12$$

$$t = 3$$

Jawapan/*Answer*: **C**

8 Imran berhenti pada saat ke-30
Imran stopped at the 30th *second*
Kadar perubahan laju
Rate of change in speed

$$= \frac{0 - 37}{5} \text{ m s}^{-2}$$

= – 7.4 m s^{-2}

Jawapan/*Answer*: **A**

9 Jumlah jarak = Luas di bawah graf
Total distance *Area under the graph*

$$= 5(5) + \left[\frac{1}{2} \times (5 + 15) \times (15 - 5)\right] +$$

$$\left[\frac{1}{2} \times (T - 15) \times 15\right]$$

$$= 25 + 100 + 7.5T - 112.5$$

$$= 12.5 + 7.5T$$

Laju purata × Jumlah masa = Jumlah jarak
Average speed × *Total time* = *Total distance*

$$8 \times T = 12.5 + 7.5T$$

$$0.5T = 12.5$$

$$T = 25$$

Jawapan/*Answer*: **D**

10 Kadar perubahan laju/*Rate of change in speed*
= 4 m s^{-2}

$$\frac{v - 5}{20} = 4$$

$$v = 80 + 5$$

$$v = 85$$

Jawapan/*Answer*: **B**

Kertas 2

Bahagian A

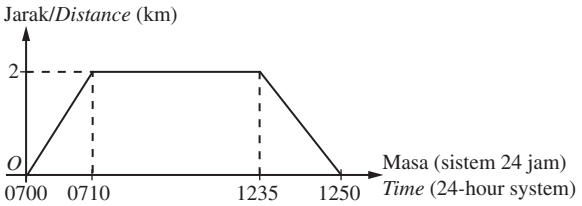
1 (a) jam 1145 – jam 1215 = 30 minit
1145 *hours* – 1215 *hours* = 30 *minutes*

(b) (i) $8 - s = 2$
$s = 6$

(ii) jam 1235
1235 *hours*

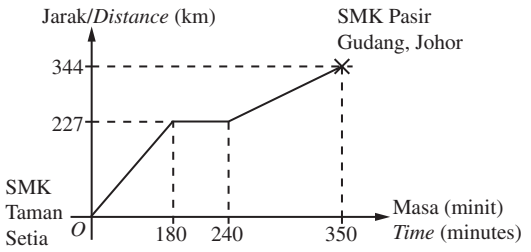
(c) Laju/*Speed* $= \dfrac{8 \text{ km}}{(10 \div 60)\text{j/h}}$
$= 48 \text{ km j}^{-1}\text{/km h}^{-1}$

2



3 (a) $p = 227$, $q = 227 + 117$
$= 344$

(b)



(c) Bas bergerak pada laju seragam.
The bus moves at uniform speed.

4 (a) Jarak/*Distance* $= 70 \times (25 - 15)$
$= 700$ m
Zarah bergerak sejauh 700 m dengan laju seragam 70 m s^{-1}.
The particle moves 700 m *at a uniform speed of* 70 m s^{-1}.

(b) Semasa pecutan/*During acceleration*:
Jarak dilalui/*Distance travelled*
$= \dfrac{1}{2} \times (25 + 70) \times (15 - 5)$
$= 475$ m
Semasa nyahpecutan/*During deceleration*:
Jarak dilalui/*Distance travelled*
$= \dfrac{1}{2} \times 70 \times (30 - 25)$
$= 175$ m
Jumlah jarak/*Total distance* $= 475 + 175$
$= 650$ m

5 (a) 10 km j^{-1}/km h^{-1}

(b) Jarak dilalui/*Distance travelled*
$= \dfrac{1}{2} \times \left(\dfrac{50 + (35 - 10)}{60} \right) \times 10$
$= 6.25$ km

6 Beza jarak dilalui
Difference in the distance travelled
$= 15$ km
$\left[\dfrac{1}{2} \times (30 + 30 - 5) \times (v - 12) \right] - \left[\dfrac{1}{2} \times (30 - 5) \times v \right] = 15$
$55(v - 12) - 25v = 15 \times 2$
$55v - 660 - 25v = 30$
$30v = 30 + 660$
$v = 23$

Bahagian B

7 (a) (i) $3 - 2.5 = 0.5$ jam/*hour*
$= 30$ minit/*minutes*

(ii) Jarak dilalui
Distance travelled
$= 91.2 \times 2.5$ km
$= 228$ km
$s = 320 - 228$
$= 92$

(b) (i) Laju purata
Average speed
$= \dfrac{320}{3}$
$= 106\dfrac{2}{3}$ km j^{-1}/km h^{-1}

(ii) Jarak yang dilalui/*Distance travelled*
$= \dfrac{320}{3} \times 2$
$= 213\dfrac{1}{3}$ km atau/*or* 213.33 km
Jarak dari *KL*/*Distance from KL*
$= 320 - 213\dfrac{1}{3}$
$= 106\dfrac{2}{3}$ km atau/*or* 106.67 km

8 (a) jam (0800 – 0755) = 5 minit
(0800 – 0755) *hours* = 5 *minutes*

(b) (i) Jarak yang dilalui/*Distance travelled*
$= 52.8 \times \dfrac{25}{60} = 22$ km

(ii) Laju/*Speed* $= \dfrac{35 - 22}{10 \div 60}$
$= 78 \text{ km j}^{-1}\text{/km h}^{-1}$
Kereta Janet bergerak sejauh 13 km dalam masa 10 minit dengan laju seragam 78 km j^{-1}.
Janet's car moved 13 km *in* 10 *minutes with a uniform speed of* 78 km h^{-1}.

(c) Masa diambil/*Time taken* $= \frac{35}{70}$

$= 0.5$ j/h

$= 30$ min

Masa sampai di rumah/*Arrival time at home*

= jam 1700 + 30 min

1700 *hours* + 30 min

= jam 1730/1730 *hours*

9 (a) Laju seragam zarah Q

Uniform speed of particle Q

$= 25$ m s^{-1}

(b) Kadar perubahan laju

Rate of change in speed

$= \frac{25}{5} = 5$ m s^{-2}

(c) Jarak dilalui oleh P

Distance travelled by P

= 187.5 + Jarak dilalui oleh Q

Distance travelled by Q

$$\frac{1}{2} \times t \times 60 = 187.5 + \left[\frac{1}{2} \times (t + t - 5) \times 25\right]$$

$$30t = 187.5 + 25t - 62.5$$

$$5t = 125$$

$$t = 25$$

(d) Laju purata zarah Q

Average speed of particle Q

$= \frac{25(25) - 62.5}{25}$

$= 22.5$ m s^{-1}

Bahagian C

10 (a) Laju awal/*Initial speed* $= 60$ km j^{-1}/km h^{-1}

Laju akhir/*Final speed* $= 0$ km j^{-1}/km h^{-1}

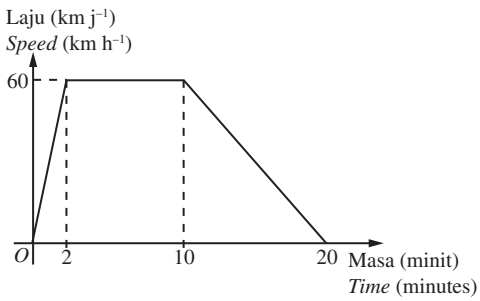
(b) Kadar perubahan laju

Rate of change in speed

$= \frac{(0 - 60) \text{ km j}^{-1}}{(10 \div 60) \text{ j}}$

$= -360$ km j^{-2}/km h^{-2}

(c)



(d) Jarak/*Distance* $= \frac{1}{2} \times \left(\frac{20 + 10 - 2}{60}\right) \times 60$

$= 14$ km

(e) Laju purata

Average speed

$= \frac{14 \text{ km}}{(20 \div 60) \text{ j/h}}$

$= 42$ km j^{-1}/km h^{-1}

(f) (i) Jarak antara kedai makan dan rumah

= (14 – 5) km

= 9 km

$x = \frac{9 \text{ km}}{(10 \div 60) \text{ j}}$

$= 54$ km j^{-1}/km h^{-1}

(ii) Waktu Ben memandu dari pejabat ke rumah

The time Ben drove from office to home

= jam 0730 + 20 minit + 9 jam 10 minit

0730 *hours* + 20 *minutes* + 9 *hours* 10 *minutes*

= jam 1700

1700 *hours*

Waktu Ben bertolak dari kedai

The time Ben left the restaurant

= jam 1705 + 1 jam 30 minit

1705 *hours* + 1 *hour* 30 *minutes*

= jam 1835

1835 *hours*