**SKEMA JAWAPAN PEPERIKSAAN PERCUBAAN SPM 2022**

**MATEMATIK : 1449 / 1**

**KERTAS 1**

| | |
|---|---|
| 1 | C |
| 2 | B |
| 3 | D |
| 4 | A |
| 5 | B |
| 6 | D |
| 7 | B |
| 8 | B |
| 9 | A |
| 10 | A |

| | |
|---|---|
| 11 | A |
| 12 | B |
| 13 | C |
| 14 | C |
| 15 | B |
| 16 | D |
| 17 | A |
| 18 | C |
| 19 | C |
| 20 | D |

| | |
|---|---|
| 21 | C |
| 22 | D |
| 23 | B |
| 24 | C |
| 25 | C |
| 26 | B |
| 27 | A |
| 28 | D |
| 29 | D |
| 30 | A |

| | |
|---|---|
| 31 | D |
| 32 | C |
| 33 | B |
| 34 | A |
| 35 | D |
| 36 | C |
| 37 | B |
| 38 | A |
| 39 | A |
| 40 | D |

**RUMUSAN BILANGAN JAWAPAN :**

**A = 10**

**B = 10**

**C = 10**

**D = 10**

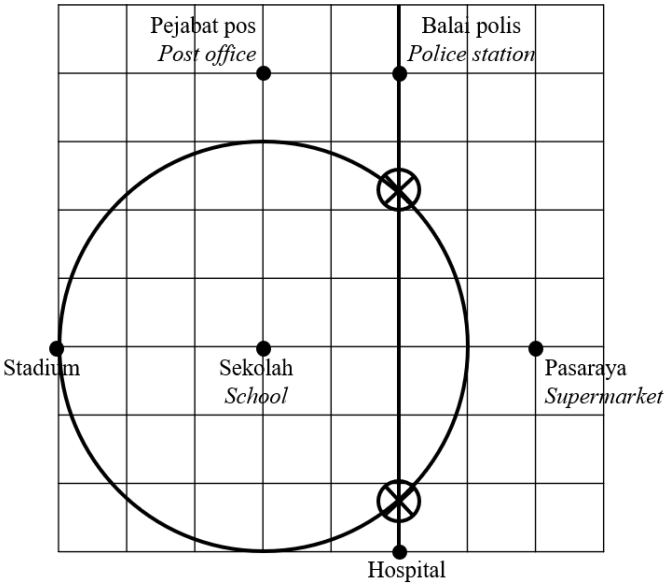
**SKEMA JAWAPAN PEPERIKSAAN PERCUBAAN SPM 2022**

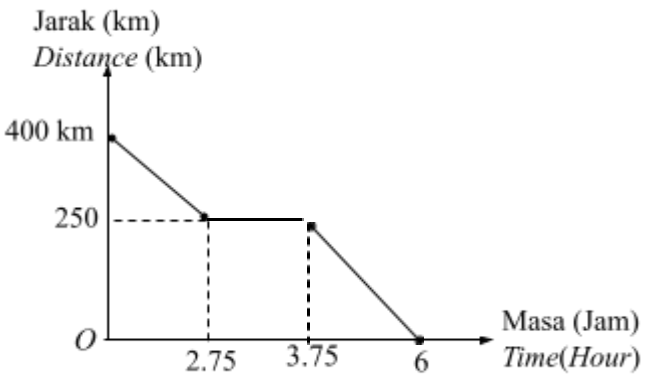
**MATEMATIK : 1449 / 2**

**KERTAS 2**

**BAHAGIAN A**

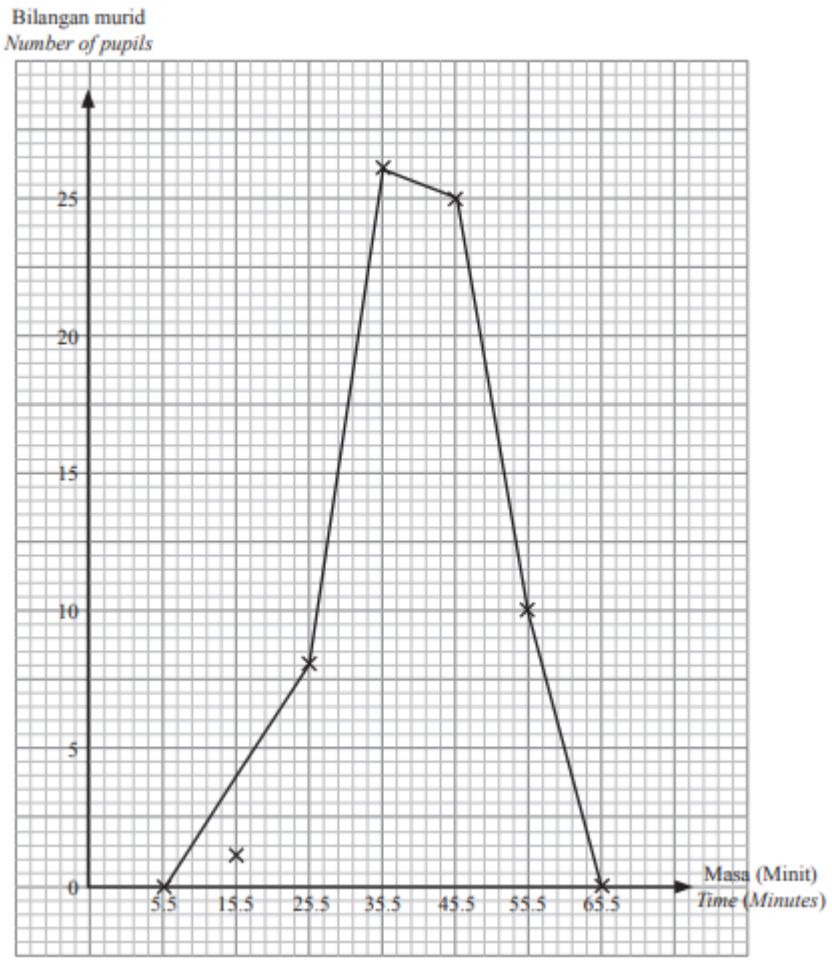
| | | | |
|---|---|---|---|
| **1.** | (a) | $4m-(-6)(2)=0$<br><br>$m=-3$ | 1m<br><br>1m |
| | (b) | $2x+3y=27$<br><br>$3x+4y=38$ dua-dua mesti betul<br><br>$(2\ 3\ 3\ 4\ )(x\ y\ )=(27\ 38\ )$ | 1m<br><br><br><br>1m |
| **2.** | $V = \{P, Q, R, S, T, U, W, X\}$<br>$E = \{(Q, P), (Q, R), (Q, X), (R, W), (S, U), (S, T), (U, W), (W, X)\}$<br>$2 \times 8$<br>16<br>(kaedah lain yang sesuai : 2m) | | 1m<br>1m<br>1m<br>1m |
| **3.** | Baki nilai kereta = $\frac{119000}{1000}\times 20.30$ atau RM2415.70<br><br>Premium Asas = $\frac{119000}{1000}\times 20.30+243.90$ atau RM2659.60<br><br>NCD = $\frac{45}{100}\times\left(\frac{119000}{1000}\times 20.30+243.90\right)$ atau RM1196.82<br><br>Premium Kasar = RM 2 659.60 – RM 1 196.82<br>= RM1 462.78 | | 1m<br><br>1m<br><br>1m<br><br>1m |

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| **4.** | (a) | Laju = $\frac{10\ km}{\frac{42}{60}\ j}$<br><br>= 14.28 km/j | 1m<br><br>1m |
| | (b) | $x$ = masa dalam minit<br><br>$\frac{10}{\frac{35+x}{60}} = 15$<br><br>$x$ = 5 minit | 1m<br><br>1m |
| **5.** | | <br><br>Lukis lokus bulatan dengan tepat dan licin<br>Lukis lokus garis lurus dengan tepat dan licin<br>Tanda 2 simbol ⊗ dengan tepat. | <br><br>1m<br>1m<br>1m |
| **6** | (*a*) | Keadaan ekonomi <u>*atau*</u> Situasi politik | 1m |
| | (*b*) | 45 000 <u>*atau*</u> 405 000<br><br>$405\ 000 + \left( 405\ 000 \times \frac{3}{100} \times 25 \right)$ | 1m<br><br>1m<br><br>1m |

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| | | $\dfrac{405\ 000+\left(405\ 000\times\dfrac{3}{100}\times 25\right)}{25\times 12}$<br><br>RM2 362.50 | 1m |
| **7.** | $8\times 9^1+7\times 9^0$ atau $2\times 5^2+4\times 5^1+4\times 5^0$ atau setara<br>79 dan 74<br>*79 – *74<br>5 | | 1m<br>1m<br>1m<br>1m |
| **8.** | (a) | Jika $x$ ialah gandaan 4, maka $x$ ialah nombor genap | 1m |
| | (b) | Implikasi 1 : Jika $A\cap B\subset B$ , maka $A\subset B$<br>Implikasi 2: Jika $A\subset B$ , maka $A\cap B\subset B$ | 1m<br>1m |
| | (c) | 116 adalah gandaan 8 | 1m |
| **9.** | (a) |  | 2m |
| | (b) | 250 | 1m |
| | (c) | $\frac{400}{6}$<br>66. 67 $kmj^{-1}$ | 1m<br>1m |
| **10.** | Sudut rujukan sepadan<br>$= kos^{-1}\ 0.2079$<br>$= 78^o$<br>$\theta = 180^o - 78^o$ atau $180^o + 78^o$<br>$= 102^o , 258^o$ | | 1m<br>1m, 1m |

**BAHAGIAN B**

<table>
<tr><td rowspan="5">11.</td><td rowspan="3">(a)</td><td>(i)</td><td>1</td><td>1m</td></tr>
<tr><td>(ii)</td><td>4</td><td>1m</td></tr>
<tr><td>(iii)</td><td>$a(0-1)(0-4) = -12$<br>$a = -3$</td><td>1m<br>1m</td></tr>
<tr><td>(b)</td><td colspan="2">$\frac{1+4}{2}$ <u>atau</u> setara<br><br>$x = \frac{5}{2}$ <u>atau</u> $x = 2.5$<br><br>Jawapan akhir $\frac{5}{2}$ <u>atau</u> 2.5 sahaja, tanpa “$x$ =” , terima 0m</td><td>1m<br><br>1m</td></tr>
<tr><td>(c)</td><td colspan="2">$y = -3\ (2.5 - 1)\ (2.5 - 4)$<br><br>$y = 6.75$<br><br>$(2.5\ ,\ 6.75)$ <u>atau</u> setara</td><td>1m<br><br>1m<br><br>1m</td></tr>
<tr><td>12.</td><td>(a)</td><td colspan="2">(i)<br><table><tr><th>Masa (Minit)<br>Time (Minutes)</th><th>Kekerapan<br>Frequency</th><th>Titik tengah<br>Midpoint</th></tr><tr><td>11 – 20</td><td>4</td><td>15.5</td></tr><tr><td>21 – 30</td><td>8</td><td>25.5</td></tr><tr><td>31 – 40</td><td>26</td><td>35.5</td></tr><tr><td>41 – 50</td><td>25</td><td>45.5</td></tr><tr><td>51 – 60</td><td>10</td><td>55.5</td></tr></table></td><td>1m</td></tr>
<tr><td></td><td></td><td colspan="2">(ii) $\bar{x} = \frac{4(15.5)+8(25.5)+26(35.5)+25(45.5)+10(55.5)}{4+8+26+25+10}$ $atau$ $\frac{2\,881.5}{73}$<br>$x = 39.47$<br><br>$\sigma = \frac{4(15.5^2)+8(25.5^2)+26(35.5^2)+25(45.5^2)+10(55.5^2)}{73} - 39.47^2$<br><br>$\sigma = 10.31$</td><td>1m<br>1m<br><br>1m<br><br>1m</td></tr>
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|---|---|---|---|
| | (b) | <br>Skala seragam dan kedua-dua paksi betul dan tepat 1m<br>7 koordinat di plot dengan tepat 2m<br>Sambungan licin 1m | 4m |
| | | (ii) 31 – 40 | 1m |
| **13.** | (a) | <table><tr><th>Dadu/Dice<br>Bola/Ball</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th></tr><tr><td>B</td><td>(1, B)</td><td>(2, B)</td><td>(3, B)</td><td>(4, B)</td><td>(5, B)</td><td>(6, B)</td></tr><tr><td>Y</td><td>(1, Y)</td><td>(2, Y)</td><td>(3, Y)</td><td>(4, Y)</td><td>(5, Y)</td><td>(6, Y)</td></tr><tr><td>W</td><td>(1, W)</td><td>(2, W)</td><td>(3, W)</td><td>(4, W)</td><td>(5, W)</td><td>(6, W)</td></tr></table> | 2m |
| | (b) | (i) {(5, W), (6, W)}<br>$\frac{2}{18} = \frac{1}{9}$ | 1m<br>1m |
| | | (ii) {(1, B),(1, Y),(1, W),(2, B),(2, Y),(2, W),(3, Y),(4, Y),(5, Y),(6, Y)}<br>$\frac{10}{18} = \frac{5}{9}$ | 1m<br>1m |
| | | (iii) {(2, B), (3, B), (5, B)} $\Rightarrow \frac{3}{18} = \frac{1}{6}$ | 1m,<br>1m |

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| **14.** | (a) | (i) Jumlah wang yang perlu disimpan dalam satu tahun = RM 19 500<br>( RM 100 000 – 70% X RM 115 00)<br><br>Jumlah wang disimpan mengikut pelan kewangan<br>= 12 X RM 1 200<br>= RM 14 400 < RM 19 500<br>Maka, matlamat kewangan Encik David tidak dapat dicapai.<br><br>(ii) (RM 19 500 – RM 14 400) ÷ 12 = RM 425<br>Mengurangkan perbelanjaan melancong dan hiburan sebanyak RM 425. | 1m<br><br>1m<br><br>1m<br><br>1m |
| | (b) | (i) Ya. Sebab selepas satu tahun, pinjaman kereta Encik David akan diselesaikan. Wang yang boleh diguna :<br>= RM 1 200 + RM 425 + RM 1 850<br>= RM 3 475 > RM 3 442.47<br><br>(ii) Membeli insurans.<br>Melabur untuk masa depan. | 1m<br><br>1m<br>1m<br><br>1m<br>1m |
| **15.** | (a) | $V(2, 4) \xrightarrow{\begin{pmatrix} 3 \\ -4 \end{pmatrix}} V'(-2 + 3, 4 + -4) = V'(5, 0) \xrightarrow{x = 4} V''(3, 0)$ | 1m |
| | (b) | **D** = Pantulan pada garis $y = x - 1$<br>**E** = Pantulan pada garis $y = 6$ | 3m<br>2m |
| | (c) | Pusat pembesaran = (1, 7)<br>Faktor skala = –3 | 1m<br>1m |
| | | Luas EFGH = $k^2$ (luas PQRS) : andaikan luas PQRS = A<br>$316.8 = (-3)^2 A$<br>$9A = 316.8$<br>$A = 35.2\ m^2$. | 1m<br><br><br>1m |

**BAHAGIAN C**

| | | | |
|---|---|---|---|
| **16.** | (a) | Umur Ariff = $p$ tahun<br>Umur Amir = $(p - 3)$ tahun<br>Umur Encik Ahmad = $(p - 3)^2$ tahun<br>Jumlah umur mereka bertiga = $p + (p - 3) + (p - 3)^2$<br>$= p + p - 3 + p^2 - 6p + 9$<br>$= (p^2 - 4p + 6)$ tahun | 1m<br>1m<br>1m<br><br>1m |

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| | (b) | (i) Hotel Rasa Sayang :<br>Q1 = RM 210 ; Q3 = RM 280<br>Julat antara kuartil = RM 280 – RM 210<br>= RM 70<br>Hotel Makro :<br>Q1 = RM 165 ; Q3 = RM 275<br>Julat antara kuartil = RM 275 – RM 165<br>= RM 110 | 1m<br>1m<br>1m<br>1m |
| | | (ii) Hotel Rasa Sayang.<br>Kerana julat antara kuartilnya lebih kecil daripada Hotel Makro. | 1m<br>1m |
| | (c) | Kapasiti enjin kereta terletak antara 1 801 cc dan 2 000 cc.<br>Jadi, kadar asas ialah RM280.<br>Jumlah kadar progresif = (1 822 cc – 1 800 cc) × RM0.50<br>= 22 × RM0.50<br>= RM11.00<br>Jumlah cukai jalan = Jumlah kadar progresif + Kadar asas Total<br>= RM11.00 + RM280.00<br>= RM291 | 1m<br>1m<br>1m<br>1m<br>1m |
| **17.** | (a) | Pemboleh ubah pertama = Harga sebiji oren = RM$x$<br>Pemboleh ubah kedua = Harga sebiji epal = RM$y$<br>Harga yang dibayar oleh Farah :<br>4(x) + 3(y) = RM10<br>4x + 3y =10<br>Harga yang dibayar oleh Dania :<br>4(x) + 4(y) = RM12<br>4x + 4y = 12 (÷4)<br>x + y = 3 | 1m<br>1m<br>1m<br>1m |
| | (b) | (i) Jumlah bilangan murid = 80<br>x + y + 52 = 80<br>x + y = 28 ------ ❶<br>y + 12 + 6 + 8 = 2(x + 12 + 6 + 3)<br>y + 26 = 2x + 42<br>–2x + y = 16 ------ ❷<br>❶ – ❷ : 3x = 12<br>x = 4<br>Maka, bilangan ahli Persatuan Sains = 12 + 6 + 3 + 4<br>= 25 | 1m<br>1m<br>1m<br>1m |
| | | (ii) Dari ❶ :<br>4 + y = 28 ;<br>x = 4, y = 24 | |

| | | | |
|---|---|---|---|
| | | $\therefore x + y = 4 + 24$<br>$= 28$ | 1m<br>1m |
| | (c) | (i) Luas B = $k^2$ (luas A)<br>$32 = k^2 (18)$<br>$k = \sqrt{\frac{16}{9}}$<br>$k = \frac{4}{3}$ atau $-\frac{4}{3}$<br><br>(ii) (8, 8)<br><br>*Jika terlihat* (3, 10), beri 1m | 1m<br><br>1m, 1m<br><br>2m |