

SULIT



**KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI**

**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI**

JABATAN KEJURUTERAAN MEKANIKAL

PEPERIKSAAN AKHIR

SESI II : 2022 / 2023

SBK1012 : MATEMATIK

TARIKH : 03 JUN 2023

MASA : 8.30 PG – 10.30 PG (2 JAM)

Kertas ini mengandungi **TUJUH (7)** halaman bercetak.

Struktur (4 soalan)

Dokumen sokongan yang disertakan : Formula

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

ARAHAN :

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

SOALAN 1

CLO1

- (a) Kenalpasti **LIMA (5)** kuantiti asas daripada senarai dibawah.

| |
|---------------------------------------------------------------------------------------------------|
| Halaju, Panjang, Pecutan, Jisim, Masa, Ketumpatan, Suhu, Arus elektrik, Tegasan, Daya, Voltan. |
|---------------------------------------------------------------------------------------------------|

[5 markah]

- (b) Tukarkan unit-unit berikut. Tunjukkan jalan penyelesaian.

- i. 5.5km kepada m
- ii. 6.25m kepada mm
- iii. 72500g kepada tan
- iv. 500kg kepada g
- v. 7200s kepada jam

[10 markah]

- (c) Kira frekuensi berikut dalam unit Hz dan bentuk piawai.

- i. 52.8 MHz
- ii. 43.5 GHz
- iii. 72.6 kHz
- iv. 800 mHz
- v. 6823 cHz

[10 markah]

SOALAN 2

CLO1

(a) Senaraikan **LIMA (5)** kuantiti terbitan.

[5 markah]

(b) i. Tukarkan nilai berikut dalam bentuk piawai.

| Nilai | Bentuk Piawai |
|---------------|---------------|
| i. 0.0000554 | |
| ii. 49.63 | |
| iii. 5000.217 | |
| iv. 0.68522 | |
| v. 27778.563 | |

[5 markah]

ii. Tukarkan setiap bentuk piawai berikut kepada nombor nyata.

| Bentuk Piawai | Nombor Nyata |
|-----------------------------|--------------|
| i. 4.35×10^4 | |
| ii. 7.323×10^5 | |
| iii. 5.5424×10^4 | |
| iv. 8.12×10^{-3} | |
| v. 2262.44×10^{-8} | |

[5 markah]

(c) Selesaikan pengiraan soalan berikut dan nyatakan dalam bentuk piawai.

Tunjukkan jalan penyelesaian.

- i. $135 + 7280$
- ii. $4.7 - 3.9 - 0.02$
- iii. $52.4 - 2.86 + 9.5$
- iv. 2000×8.4
- v. $10.3 \times 2400 \div 0.6$

[10 markah]

SOALAN 3

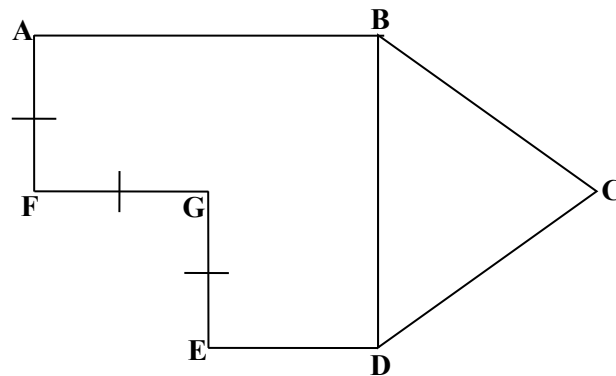
CLO1

(a) Berikan definisi bagi luas dan isipadu beserta unit SI.

- i. Luas
- ii. Isipadu

[4 markah]

(b) i. Kira perimeter bagi Rajah 3(b)(i) di bawah.

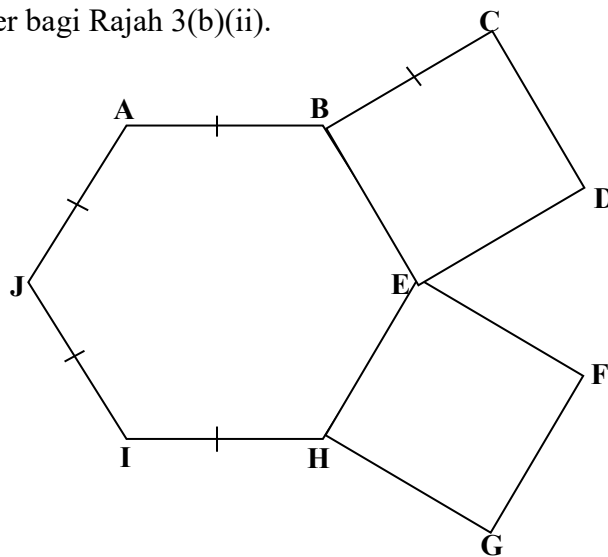


$$\begin{aligned} AF &= FG = GE = 6 \text{ cm} \\ BC &= DC = BD = 2AF \\ ED &= 8 \text{ cm} \end{aligned}$$

Rajah 3(b)(i)

[4 markah]

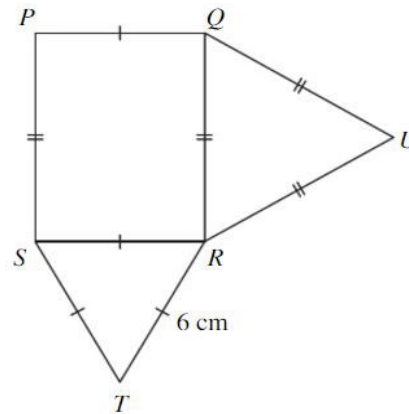
ii. BCDE dan EFGH adalah segiempat sama. AB dan BC = 5 cm. Kira perimeter bagi Rajah 3(b)(ii).



Rajah 3(b)(ii)

[3 markah]

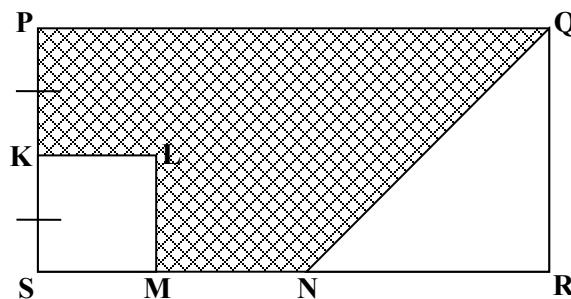
- iii. PQRS ialah sebuah segi empat tepat, TSR dan QRU ialah segi tiga sama sisi. Panjang PS, ialah 13 cm. Kirakan perimeter Rajah 3(b)(iii) di bawah.



Rajah 3(b)(iii)

[4 markah]

- (c) i. Dalam Rajah 3(c)(i), PQRS ialah sebuah segiempat tepat dan KLMS ialah sebuah segiempat sama. Kira perimeter dalam cm bagi Kawasan berlorek.

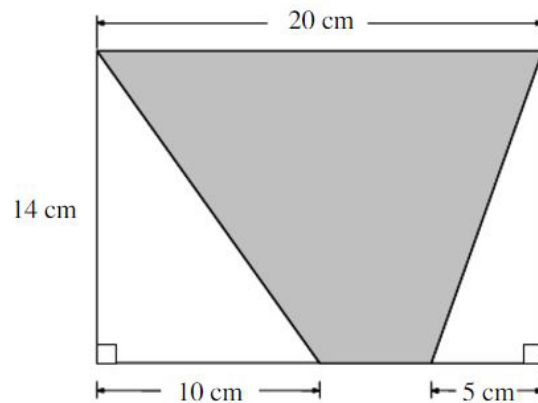


SM = 2 cm
 NQ = 5 cm
 NR = 3 cm
 PQ = 14 cm
 QR = 4 cm

Rajah 3(c)(i)

[3 markah]

- ii. Hitung luas kawasan berlorek dalam Rajah 3(c)(ii) berikut.



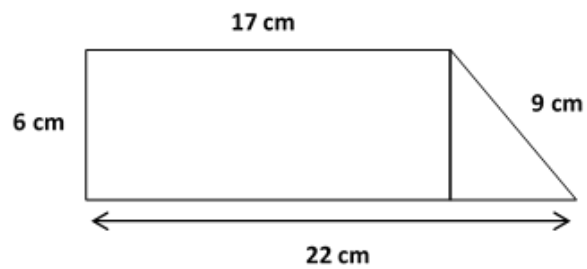
Rajah 3(c)(ii)

[7 markah]

SOALAN 4

CLO1
C2

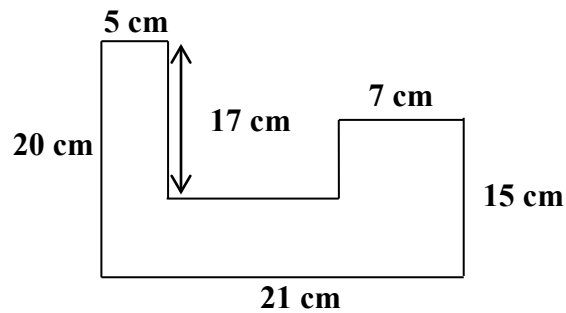
- (a) Kira luas Rajah 4(a) di bawah.



Rajah 4(a)

[5 markah]

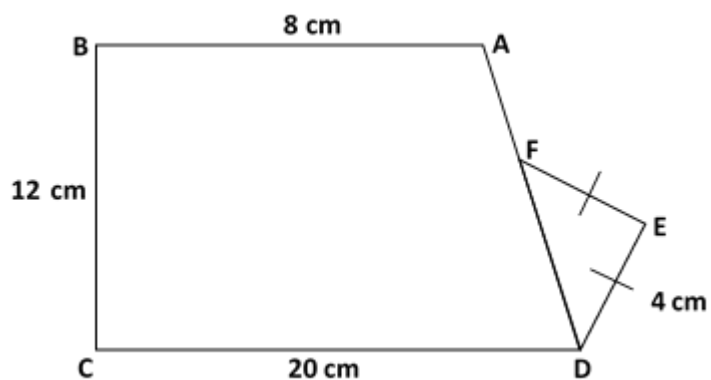
- (b) i. Hitungkan luas bagi Rajah 4(b)(i) berikut. Berikan jawapan dalam
- cm^2
- .



Rajah 4(b)(i)

[5 markah]

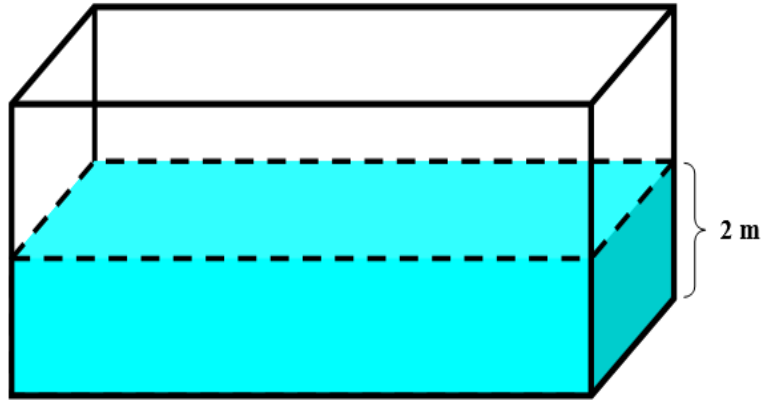
- ii. Kira luas ABCDEF pada Rajah 4(b)(ii).



Rajah 4(b)(ii)

[5 markah]

- (c) Sebuah tangki air berbentuk segiempat tepat adalah 17 m panjang, 10 m lebar dan 5 m tinggi seperti pada Rajah 4(c). Kira berapa banyak air, dalam cm^3 , mesti di pam ke dalam tangki untuk penuh.



Rajah 4(c)

[10 markah]

SOALAN TAMAT

FORMULA

| BIL | TOPIK | FORMULA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------|--------------------------|-------------------------|------|---|------------------|-------------------|------|---|---------------|---------------|------|---|---------------|-----------|------|---|---------------|-------|-------|---|---------------|-----|------|----|---------------|---|------|---|------------------|-----|-------|---|------------------|------|------|---|------------------|-------|-------|-------|------------------|----------|------|---|------------------|-------------|------|---|-------------------|----------------|
| 1 | Nombor Piawai | <table border="1"> <thead> <tr> <th>Imbuhan</th> <th>Simbol</th> <th>Nilai (Bentuk Piawai)</th> <th>Nilai (Nombor Nyata)</th> </tr> </thead> <tbody> <tr> <td>Tera</td> <td>T</td> <td>$\times 10^{12}$</td> <td>1 000 000 000 000</td> </tr> <tr> <td>Giga</td> <td>G</td> <td>$\times 10^9$</td> <td>1 000 000 000</td> </tr> <tr> <td>Mega</td> <td>M</td> <td>$\times 10^6$</td> <td>1 000 000</td> </tr> <tr> <td>Kilo</td> <td>k</td> <td>$\times 10^3$</td> <td>1 000</td> </tr> <tr> <td>Hecto</td> <td>h</td> <td>$\times 10^2$</td> <td>100</td> </tr> <tr> <td>Deca</td> <td>da</td> <td>$\times 10^1$</td> <td>1</td> </tr> <tr> <td>Deci</td> <td>d</td> <td>$\times 10^{-1}$</td> <td>0.1</td> </tr> <tr> <td>Centi</td> <td>c</td> <td>$\times 10^{-2}$</td> <td>0.01</td> </tr> <tr> <td>Mili</td> <td>m</td> <td>$\times 10^{-3}$</td> <td>0.001</td> </tr> <tr> <td>Micro</td> <td>μ</td> <td>$\times 10^{-6}$</td> <td>0.000001</td> </tr> <tr> <td>Nano</td> <td>n</td> <td>$\times 10^{-9}$</td> <td>0.000000001</td> </tr> <tr> <td>Pico</td> <td>p</td> <td>$\times 10^{-12}$</td> <td>0.000000000001</td> </tr> </tbody> </table> | Imbuhan | Simbol | Nilai (Bentuk Piawai) | Nilai (Nombor Nyata) | Tera | T | $\times 10^{12}$ | 1 000 000 000 000 | Giga | G | $\times 10^9$ | 1 000 000 000 | Mega | M | $\times 10^6$ | 1 000 000 | Kilo | k | $\times 10^3$ | 1 000 | Hecto | h | $\times 10^2$ | 100 | Deca | da | $\times 10^1$ | 1 | Deci | d | $\times 10^{-1}$ | 0.1 | Centi | c | $\times 10^{-2}$ | 0.01 | Mili | m | $\times 10^{-3}$ | 0.001 | Micro | μ | $\times 10^{-6}$ | 0.000001 | Nano | n | $\times 10^{-9}$ | 0.000000001 | Pico | p | $\times 10^{-12}$ | 0.000000000001 |
| Imbuhan | Simbol | Nilai (Bentuk Piawai) | Nilai (Nombor Nyata) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tera | T | $\times 10^{12}$ | 1 000 000 000 000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Giga | G | $\times 10^9$ | 1 000 000 000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mega | M | $\times 10^6$ | 1 000 000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kilo | k | $\times 10^3$ | 1 000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hecto | h | $\times 10^2$ | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deca | da | $\times 10^1$ | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deci | d | $\times 10^{-1}$ | 0.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Centi | c | $\times 10^{-2}$ | 0.01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mili | m | $\times 10^{-3}$ | 0.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Micro | μ | $\times 10^{-6}$ | 0.000001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nano | n | $\times 10^{-9}$ | 0.000000001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pico | p | $\times 10^{-12}$ | 0.000000000001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Luas Kubus/ Kuboid | <p>= panjang x lebar = p x l</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Luas Segitiga | <p>= $\frac{1}{2}$ x panjang x lebar = $\frac{1}{2}$ x p x l</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Luas Segiempat selari | <p>= panjang x tinggi = p x t</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Luas Trapezium | <p>= $\frac{1}{2}$ x (hasil tambah 2 sisi) x tinggi = $\frac{1}{2}$ x (a+b) x t</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Luas Piramid | <p>= $\frac{1}{3}$ x tapak x tinggi = $\frac{1}{3}$ (ab) t</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Luas Silinder | <p>= Luas Bulatan x tinggi = πr^2 x tinggi</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | |
|----|--------------------------|----------------------------------------------------------------------------------------|
| 8 | Luas Bulatan | $= \pi r^2$ |
| 9 | Isipadu Kubus/ kuboid | $= \text{panjang} \times \text{lebar} \times \text{tinggi}$ $= p \times l \times t$ |
| 10 | Isipadu Kon | $= 1/3 \times \text{Luas Tapak} \times \text{tinggi}$ $= \pi r^2 \times t$ |
| 11 | Isipadu Piramid | $= 1/3 \times \text{tapak} \times \text{tinggi}$ $= 1/3 (ab) t$ |
| 12 | Isipadu Prisma | $= \text{Luas segitiga} \times \text{tinggi}$ |
| 13 | Isipadu Sfera | $= 4/3 \pi r^3$ |