

SULIT



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

JABATAN KEJURUTERAAN MEKANIKAL

**PEPERIKSAAN AKHIR
SESI DISEMBER 2015**

SBK1012: MATEMATIK

**TARIKH : 07 APRIL 2016
MASA : 8.30 AM – 10.30 AM (2 JAM)**

Kertas ini mengandungi **SEPULUH (10)** halaman bercetak.
Struktur (6 soalan)
Dokumen sokongan yang disertakan : Tiada

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

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INSTRUCTION:

This section consists of **SIX (6)** structured questions. Answer **FOUR (4)** question only.

ARAHAN :

Bahagian ini mengandungi ENAM (6) soalan berstruktur. Jawab EMPAT (4) soalan sahaja.

QUESTION 1

CLO1
C1

a) Choose **FIVE(5)** basic quantities from list below.

Pilih **LIMA(5)** kuantiti asas daripada senarai dibawah.

Velocity(*Halaju*), Length(*Panjang*), Acceleration(*pecutan*),
Mass(*Jisim*), Time(*Masa*), Density(*Ketumpatan*),
Temperature(*Suhu*), Electric Current(*Arus elektrik*),
Stress(*Tegasan*), Force(*Daya*), Voltage(*Voltan*).

(5 marks)

CLO1
C2

b) List **THREE(3)** of derive quantities with the correct unit.

Senaraikan TIGA(3) kuantiti asas dan berikan unit yang betul.

(6 marks)

CLO1
C3

c) Convert the following units

Tukarkan unit-unit berikut:

i) 5 km^2 to m^2

5 km^2 kepada m^2

ii) 6.2 cm to m

6.2 cm kepada m

iii) 7.2 kmh^{-1} to ms^{-1}

7.2 kmj^{-1} kepada ms^{-1}

(7 marks)

CLO1
C3

d) Convert the following frequency to Hz unit.

Tukarkan frekuensi berikut kepada unit Hz.

- i. 62.8 MHz
- ii. 72.5 GHz
- iii. 32.4 kHz
- iv. 100 mHz
- v. 222 cHz
- vi. 9999 μ Hz
- vii. 0.09 THz

(7 marks)

QUESTION 2

CLO1
C1

a) State the following value in standard form.

Nyatakan nilai berikut dalam bentuk piawai

- i. 0.000070
- ii. 45.60
- iii. 10006.06
- iv. 0.12222
- v. 25678.52
- vi. 0.0412
- vii. 624.55

(7 marks)

CLO1
C2

b) Give proper adjustment to the following sizes

Berikan imbuhan yang betul kepada ukuran berikut.

- i. 700 m = _____ km
- ii. 805.5 s = _____ ks
- iii. 0.35 Hz = _____ kHz
- iv. 0.00025 g = _____ mg
- v. 9008.9 F = _____ kF
- vi. 4580 A = _____ kA
- vii. 200000 m = _____ mm
- viii. 0.000000882 s = _____ μ s

(8 marks)

CLO1
C3

c)

“ The times taken for a car to move from point P to Q is 5 minutes. The distance from P to Q is 100m. The car using an unleaded petrol for 1005.5 cm^3 and carried 200 kg of load. The car velocity is 20ms^{-1} . ”

From the text, identify the basic quantities and derived quantities.

Masa yang diambil oleh sebuah kereta untuk bergerak dari titik P ke Q ialah 5 minit. Jarak dari P ke Q ialah 100 m. Kereta tersebut menggunakan petrol tanpa plumbum sebanyak 100.5 cm^3 dan membawa 200 kg beban. Halaju kereta ialah 20ms^{-1} . ”

Daripada teks, kenalpastikan kuantiti asas dan kuantiti terbitan.

(10 marks)

QUESTION 3

CLO1
C1

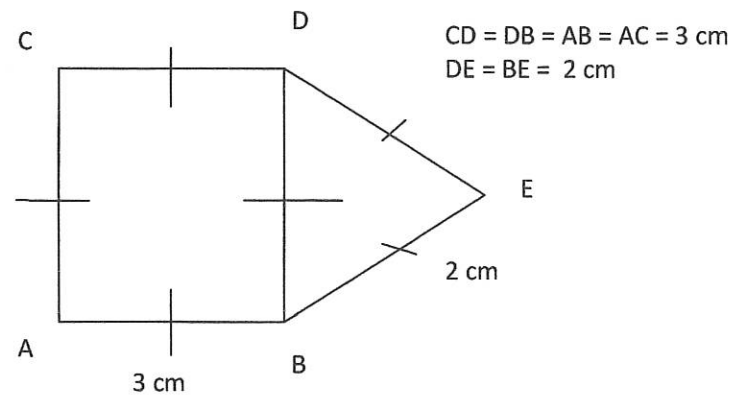
- a) Give the definition for perimeter, area and volume.
Berikan definisi bagi perimeter, luas dan isipadu.

(6 marks)

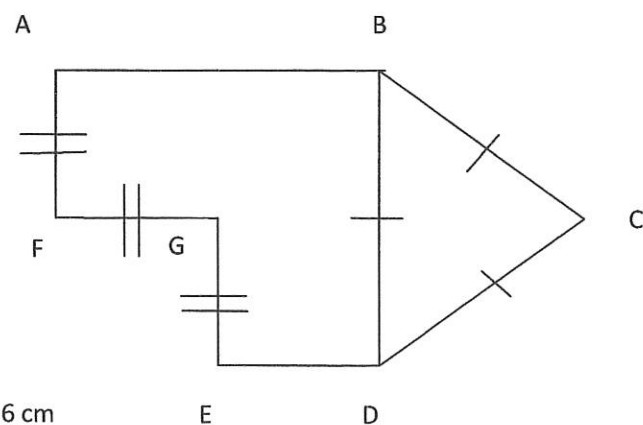
CLO1
C2

- b) Find the perimeter for the figure below.
Cari perimeter bagi gambarajah dibawah.

i)



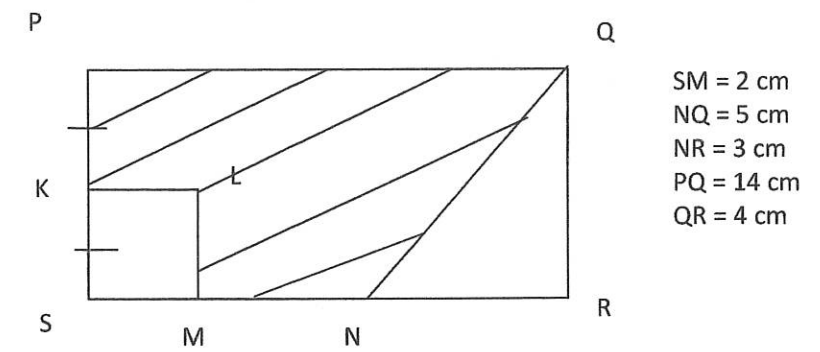
ii)



(10 marks)

CLO1
C3

- c) From the diagram below, PQRS is a rectangle and KLMS is a square. Find the perimeter, in cm, of the shaded region.
Dalam rajah PQRS ialah sebuah segiempat tepat dan KLMS ialah sebuah segiempat sama. Cari perimeter dalam cm bagi kawasan berlorek.



(10 marks)

QUESTION 4

CLO1
C1

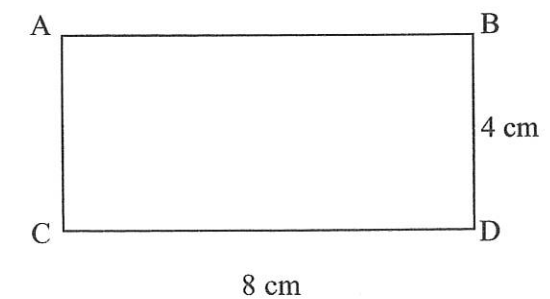
- a) Give the area formula for the following shapes :
Berikan formula luas bagi bentuk berikut :

- i. Circle
bulatan
- ii. Square
segiempat
- iii. Triangles
Segitiga

(6 marks)

CLO1
C2

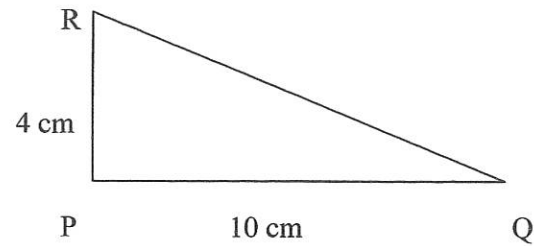
- b) i. Calculate the area of the rectangle ABCD
Kirakan luas segiempat tepat ABCD



(3 marks)
SULIT

ii. Find the area of the right angled triangle PQR.

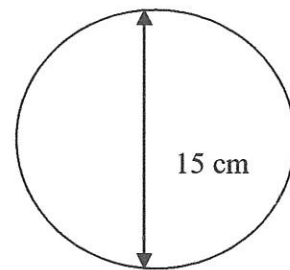
Cari luas segitiga bersudut tegak PQR.



(3 marks)

iii. Find the area of the circle below.

Cari luas bagi bulatan dibawah.

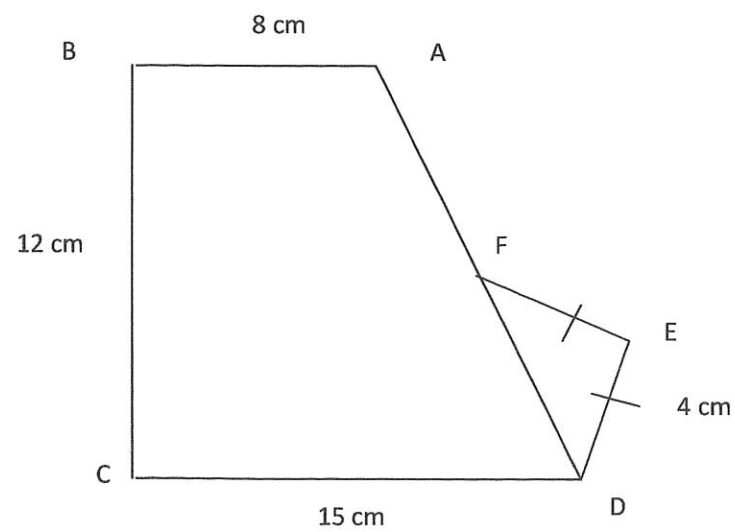


(3 marks)

CLO1
C3

c) Find the area of figure ABCDEF.

Cari luas bentuk ABCDEF.



(10 marks)

QUESTION 5

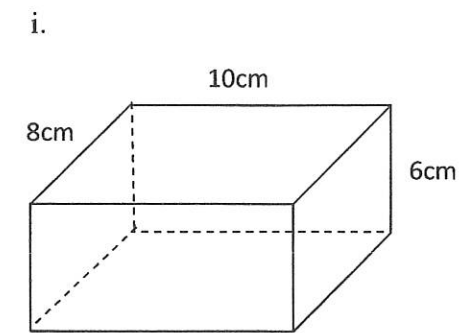
Give your answers correct to 2 decimal places.

Betulkan jawapan sehingga 2 tempat perpuluhan.

CLO1
C1

a) Calculate the volume for the following figure. ($\pi = 3.14$)

Kirakan isipadu bagi rajah di bawah.



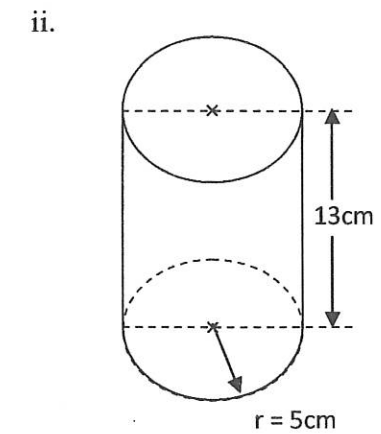
Formula:

volume = base \times length \times height

Formula:

isipadu = panjang \times lebar \times tinggi

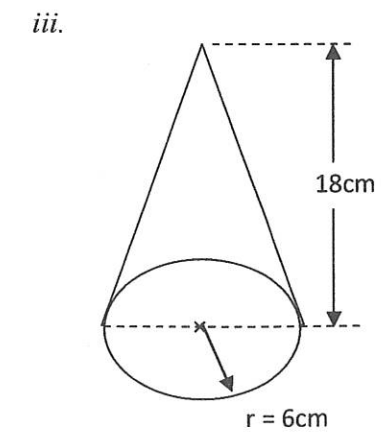
(2 marks)



Formula:

volume = $\pi r^2 h$

(2 marks)



Formula:

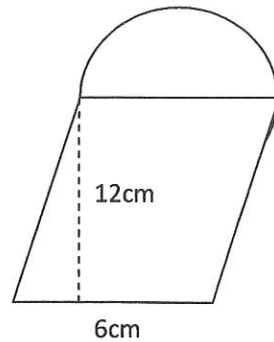
volume = $\frac{1}{3} \pi r^2 h$

(2 marks)

CLO1
C3

CLO1
C2

- b) Calculate the
- area**
- of the figure.

Hitungkan luas bagi rajah di atas. ($\pi = 3.142$)

Formula:

$$\text{Area of semicircle} = \frac{1}{2} \times \pi \times r^2$$

$$\text{Area of parallelogram} = \text{base} \times \text{height}$$

(7 marks)

CLO1
C3

- c) A rectangular water tank is 3 m long, 1.5 m wide and 2 m in height. How much water, in
- m^3
- , must be pumped into the tank to raise the water level by 8 cm.

Sebuah tangki air berbentuk segiempat tepat adalah 3 m panjang, 1.5 m lebar dan 8 m tinggi. Berapa banyak air, dalam m^3 , mesti di pam kedalam tangki untuk menaikkan paras air sebanyak 8 cm.

(12 marks)

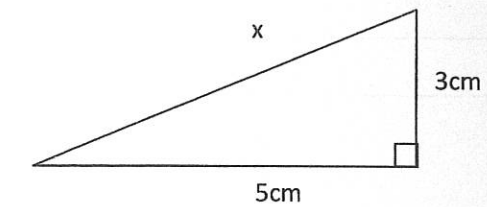
CLO1
C2

QUESTION 6

- a) Calculate the value of
- x
- .

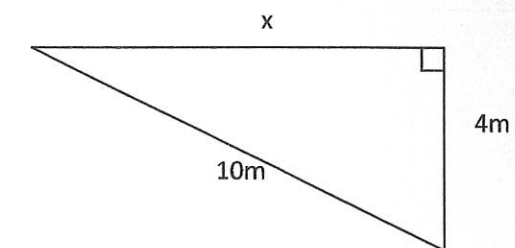
Hitungkan nilai x .

i.



(4 marks)

ii.



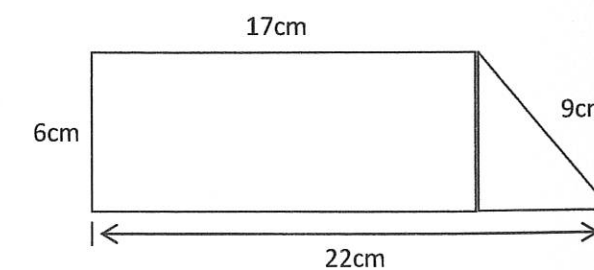
(4 marks)

CLO1
C2

- b) i. Calculate the
- perimeter**
- of the figure.

Hitungkan perimeter bagi rajah.

- ii. Calculate the
- area**
- of the figure.

Hitungkan luas bagi rajah.

Formula:

$$\text{Area of rectangle} = \text{length} \times \text{width}$$

$$\text{Area of triangle} = \frac{1}{2} \times \text{height} \times \text{base}$$

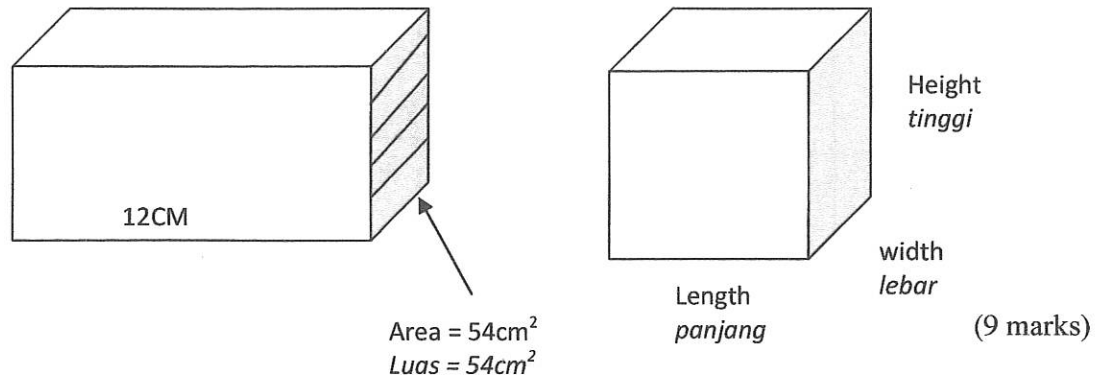
(8 marks)

CLO1
C3

- b) The diagram below shows a cuboid and cube having same volume. The shaded area is 54cm^2 . Calculate the length, width and height of the cube.

Rajah dibawah menunjukkan kuboid dan kubus yang mempunyai isipadu yang sama.

Luas satah berlorek kuboid ialah 54cm^2 . Kirakan panjang, lebar dan tinggi kubus.



SOALAN TAMAT