Multiple-choice section

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

Question 1 [5.1]

A

2 cm = 20 mm, 0.03 m = 30 mm

 mm2

Question 2 [5.1]

C

D = 0.2 m = 20 cm so r = 10 cm

 cm2

Question 3 [5.2]

C

0.5 m = 50 cm, 30 mm = 3 cm

 cm2

Question 4 [5.3]

D

The radius of the outer circular edge is 25 mm.

The radius of the inner circular edge is 22.5 mm.

V = ( Alarge circle – Asmall circle ) × length

= ( × 0.0252 –  × 0.02252 ) × 5

Question 5 [5.4] [10A]

B

 mm2

Question 6 [5.4] [10A]

A

215 mm = 21.5 cm  


Question 7 [5.5] [10A]

D



Question 8 [5.5] [10A]

A



 m3

Question 9 [5.7] [10A]

A

Volume is  cm3

Density is g/cm3

Question 10 [5.7] [10A]

D

80 ÷ 200 = 0.4 mL/mL

In 10 mL:

0.4 × 10 = 4 mL/10 mL

Multiple-choice total marks: 10

Short answer section

Question 11 2 marks [5.2, 5.4]

(a) It is not possible to construct a net of a sphere.

(b) The expression 6x2 gives the surface area of a cube of side length x.

Question 12 2 marks [5.5] [10A]

Vcon =  ×  × r2 × h

Vcylinder=  × (2r)2 × h

= 4 × × r2 × h

= 

= 12

Question 13 3 marks [5.2]

Area =  cm2

Question 14 3 marks [5.3]

 cm3

Question 15 2 marks [5.3]



Question 16 4 marks [5.1, 5.4] [10A]

(a) A =  cm2 (nearest cm2)

(b) A =  cm2

(c) A =  cm2 (nearest cm2)

Question 17 3 marks [5.5] [10A]

V =  cm3 (nearest cm3)

Question 18 3 marks [5.5] [10A]

Volume of sphere:  cm3

Volume of cylinder:  cm3

Ratio is: ...

Percentage filled is 40%.

Question 19 2 marks [5.7] [10A]



Question 20 3 marks [5.7] [10A]

Mass = 12 g New mass = x

Volume = 125 mL New volume = 150 mL

 = 

x = = 16.8 g

16.8 – 12 = 4.8

4.8 g of sugar needs to be added.

Question 21 4 marks [5.6]

(a)



(b) ,  cm and  cm  cm

Question 22 4 marks [5.6]

(a) r = h,   


(b) S = 100π, 

Short answer total marks: 35

Extended answer section

Question 23 4 marks [5.1]

Area of trapezium: cm2

Area of semicircle: cm2

Area required: 225 – 39.27 = 185.73 cm2

Question 24 3 marks [5.5] [10A]

Surface area:  Volume: 



Question 25 5 marks [5.3]

(a) V = cm3

(b) V =  cm3 (nearest cm3)

(c) 12 000 – 17.67 = 11 982 cm3 (nearest cm3)

Question 26 6 marks [5.1, 5.3]

(a) A =  m2

(b) V =  m3

(c) l =  m

Question 27 4 marks [5.3, 5.7] [10A]





 m3

The volume of cube of edge length x is x3.

x3 = 78.95

x = 4.3 cm (1 d.p.)

Extended answer total marks: 22

TOTAL test marks: 67