Multiple choice section

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

Question 1 [5.1]

C

1.5 cm = 15 mm

 mm2

Question 2 [5.1]

A

 cm2

Question 3 [5.2]

C

 m2

Question 4 [5.3]

C

 cm3

Question 5 [5.4] [10A]

C

 cm2

Question 6 [5.4] [10A]

B

 m2

Question 7 [5.5] [10A]

B

 cm3

Question 8 [5.5] [10A]

D

 cm3

Question 9 [5.7] [10A]

A

2 kg = 2000 g  g/cm3

Question 10 [5.7] [10A]

B

3 kg = 3000 g  g/cm3

Multiple-choice total marks: \_\_ / 10

Short answer section

Question 11 2 marks [5.2, 5.4]

(a) A three-dimensional shape whose cross sectional area decreases uniformly is a tapered solid.

(b) The surface area of a cube is the sum of the area of its six faces.

Question 12 2 marks [5.4] [10A]

They both are tapered solids. They begin with a base and uniformly narrow to a point.

Question 13 2 marks [5.1]

 m2

Question 14 2 marks [5.1]

Area of square – area of circle

= 24 × 24 – π × 122

= 123.6 cm2

Question 15 3 marks [5.2]

Area =  m2

Question 16 2 marks [5.3]

V = cm3

Question 17 2 marks [5.5] [10A]

V = cm3

Question 18 3 marks [5.4] [10A]

 cm2

Question 19 3 marks [5.5] [10A]

 cm3

 litres

Question 20 3 marks [5.2]

SA = cm2

Question 21 3 marks [5.7] [10A]

(a) Concentration =   
=   
= 50 g/L

(b) Concentrate = Concentration (g/L) × Volume  
= 50 g/L × 2.5 L  
= 125 g

Question 22 2 marks [5.7] [10A]

Diameter = 3.2 mm

Radius = 0.16 cm

Volume: = cm3

Density:  g/cm3

Question 23 4 marks [5.6]

(a) 



Given that b is a side length, b > 0



(b) 

Question 24 3 marks [5.6]

(a) 



(b) 

Short answer total:\_\_\_\_\_\_\_\_\_/36

Extended answer section

Question 25 6 marks [5.3, 5.4, 5.5] [10A]

(a) Vcylinder = π × 22 × 5 = 62.83 m3

(b) Vsphere =  × π × r3 = 62.83  
 = 2.5 m

(c) Use the unrounded value where r = .  
SAsphere = 4 ×  × = 76.43  
Cost = 76.43 × 40 = $3057

Question 26 5 marks [5.1, 5.3]

(a) A = (π × 32) ÷ 2 rhalfcircle = 3  
= 14.137 cm2  
A = ( π × 62 ) ÷ 4 rquartercircle = 6  
= 28.274 cm2   
Half circle = 14.14 cm2 Quarter circle = 28.27 cm2

(b) 28.27 – 14.14 = 14.14 cm2

(c) V = A × H  
= 14.137 × 2  
= 28.27 cm3

(d) V = 28.27  
28.27 = π × r2 × 1.5   
r = 2.45 cm

Question 27 5 marks [5.4] [10A]

(a)  cm2

(b) R = large circle = 10 cm r = small circle = 9 cm

Area of brim = π × R2 π × r2  
= π × 102 – π × 92  
= 59.69 cm2

(c) 1130.97 + 59.69 = 1190.66 cm2

Question 28 4 marks [5.3, 5.7]

(a)  litres

[10A] (b) 0.3 × 48 845 = 14 653.6 g = 14.65 kg

Extended answer total:\_\_\_\_\_\_/20

TOTAL test results: \_\_\_\_\_ / 66