Multiple-choice section

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

Question 1 [4.1]

C

*P* = 9 + 12 + 15

= 36 cm

Question 2 [4.1]

D

arc length = × 2πr

=× 2 × π × 10

=× 2 × π × 10

= 17.45 cm

Question 3 [4.1]

A

*P* = (19 + 22) × 2

= 82 cm

Question 4 [4.2]

B

7.85 m2 = 7.85 × 10 000 cm2 = 78 500 cm2

Question 5 [4.2]

A

*A* = *bh*

= 25 × 18

= 450 cm2

Question 6 [4.2]

D

*A* = *lw* + *bh*

= (10 × 5) + (× 10 × 6) cm2

Question 7 [4.3]

B

SA = 6*l*2

SA = 6 × 3.7 × 3.7 m2

Question 8 [4.3]

C

SA = 2 × *bh* + 2*hl* + 2*bl* +2*wl*

= (2 × × 5 × 12) + (5 × 23) + (12 × 23) + (13 × 23)

= 60 + 115 + 276 + 299

= 750 cm2

Question 9 [4.4]

B

95 500 mm3 = 95 500 ÷ 1000 cm3 = 95.5 cm3

Question 10 [4.4]

A

*V* = *AH*

= πr2 × *H*

= π × 82 × 10 cm3

Multiple-choice total marks: 10

Short answer section

Question 11 6 marks [4.1]

(a) *P* = 34 × 2 + 15 × 3

*P* = 113 mm

**(b)** *P* =π*d* + 2*l*

*P* =π × 14 + 2 × 30

*P* =103.98 cm

**(c)** 

Question 12 4 marks [4.1]

*P* = × 2π*r* + 2*r*

*P* = × 2 × π × 26 + 2 × 26

*P* = 151.83 cm

*A =* × π*r*2

*=* × π × 262

*=* 1297.83 cm2

Question 13 2 marks [4.1]

*P* = 2(60 + 35)

*P* = 190 m

total = 6 × 190 m

total = 1140 m = 1.14 km

Question 14 4 marks [4.2]

(a) 5.6 cm2 × 102 = 560 mm2

(b) 19.9 m2 × 1002 = 199 000 cm2

(c) 123 000 cm2 ÷ 1002 = 12.3 m2

(d) 0.76 ha × 1002 × 1002 = 76 000 000 cm2

Question 15 6 marks [4.2]

(a) Shaded area:



(b) *A*rea:



Question 16 8 marks [4.3]

**(i) (a)** SA = 2 × 152 + 4 × 15 × 21

SA = 450 + 1260

SA = 1710 cm2

(b) *V* = *AH*

= 152 × 21

= 4725 cm3

= 4.73 L

**(ii) (a)** SA = 2π*r*2 + 2π*rh*

SA = 2 × π × 2.42 + 2 × π × 2.4 × 5.1

SA = 113.1 m2

(b) *V* = *AH*

= π × 2.42 × 5.1

= 92.2874 m3

= 92.2874 L

Short answer total marks: 30

Extended answer section

Question 17 7 marks [4.1, 4.2, 4.4]

(a) *P* = 25 × 2 + 10 × 2 + 12

*P* = 82 m

(b) cost = 82 × 4.50

cost = $369

(c) *A* = 25 × 12 +  × 12 × 8

*A* = 348 m2

(d) 13.5 kL = 13.5 m3

(e) depth = 

depth = 

depth = 0.0388 m

depth = 0.0388 × 100 cm = 3.88 cm

Question 18 8 marks [4.3, 4.4]

(a) (i) *A* = 2 × 

*A* = 36 m2

(ii) *V* = 36 × 0.5

*V* = 18 m3

(b) tiled area = 0.5(10 + π × 5)+ π × 52

= 91.39 m2

(c) *V* = × π × 52 × 0.5

*V* = 19.635 m3

*V* = 19 635 L needed to fill the pool

(d) area of lawn = × (*a* + *b*) × *h –*×π*r*2 – 2 × 

= × (10 + 32) × 15 – × π × 52 – 2 × 

= 239.73 m2

Extended answer total marks: 15

TOTAL test marks: 55