Multiple-choice section

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

Question 1 [4.1]

C

*P* = 7 + 24 + 25

= 56 cm

Question 2 [4.1]

A

arc length = × 2πr

=× 2 × π × 5

= 8.73 m

Question 3 [4.1]

B

*P* = 5 + 8 + 6 + 7 + 11 + 15

= 52 cm

Question 4 [4.2]

C

155 cm2 = 155 ÷ 10 000 m2 = 0.0155 m2

Question 5 [4.2]

C

*A* = *bh*

= 28 × 16

= 448 cm2

Question 6 [4.2]

D

*A* = *lw* +*bh*

= (12 × 7) + (× 12 × 8)cm2

Question 7 [4.3]

B

SA = 6*l*2

SA = 6 × 4.7 × 4.7 m2

Question 8 [4.3]

C

SA = 2 × *bh* + 2*hl* + 2*bl* +2*wl*

= (2 × × 8 × 15) + (8 × 21) + (15 × 21) + (17 × 21)

= 120 + 168 + 315 + 357

= 960 cm2

Question 9 [4.4]

D

2.4 m3 = 2.4 × 1 000 000 cm3 = 2 400 000 cm3

Question 10 [4.4]

A

*V* = *AH*

= πr2 × *H*

= π × 62 × 13 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*

= × 2 × π × 20 + 2 × 20

= 111.56 cm

*A* = × π*r*2

= × π × 202

= 715.58 cm2

Question 13 2 marks [4.1]

*P* = 2(82 + 25)

*P* = 214 m

total = 10 × 214 m

total = 2140 m

= 2.14 km

Question 14 4 marks [4.2]

(a) 8.1 × 102 = 810 mm2

(b) 32.8 m2 × 1002 = 328 000 cm2

(c) 654 000 cm2 ÷ 1002 = 65.4 m2

(d) 0.43 ha × 1002 × 1002 = 43 000 000 cm2

Question 15 6 marks [4.2]

(a) Shaded area:



(b) *A*rea:



Question 16 8 marks [4.3]

**(i) (a)** SA = 2 × 122 + 4 × 12 × 23

SA = 288 + 1104

SA = 1392 cm2

(b) *V* = *AH*

= 122 × 23

= 3312 cm3

= 3.31 L

**(ii) (a)** SA = 2π*r*2 + 2π*rh*

SA = 2 × π × 1.42 + 2 × π × 1.4 × 3.2

SA = 40.46 m2

(b) *V* = *AH*

= π × 1.42 × 3.2

= 19.704 07 m3

= 19 704.07 L

Short answer total marks: 30

Extended answer section

Question 17 7 marks [4.1, 4.2, 4.4]

(a) *P* = 35 × 2 + 17 × 2 + 30

*P* = 134 m

(b) cost = 134 × 3.50

cost = $469

(c) *A* = 35 × 30 +  × 30 × 8

*A* = 1170 m2

(d) 21.5 kL = 21.5 m 3

(e) depth = 

depth = 

depth = 0.018 38 m

depth = 0.018 38 × 100 cm = 1.84 cm

Question 18 1 + 1 + 1 + 2 + 2 + 1 marks [4.3, 4.4]

(a) (i) *A* = 2 × 

*A* = 49 m2

(ii) *V* = 49 × 0.4

*V* = 19.6 m3

(b) tiled area = 0.5(0.5 × π × 62)+ 0.5(π× 6 + 12)

= 28.27 + 15.42

= 43.69 m2

(c) *V* = × π × 62 × 0.5

*V* = 28.274 m3

*V* = 28 274 L needed to fill the pool

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

= × (12 + 36) × 16 – × π × 62 – 2 × 

= 278.45 m2

Extended answer total marks: 15

TOTAL test marks: 55