Multiple-choice section

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

Question 1 [5.1]

B

Perimeter of the square = 4 × edge length

= 4 × 6 = 24 cm

Question 2 [5.3]

A

*C* = 2π*r*

= 2 × π × 10 = 62.83 cm

Question 3 [5.4]

A

Area = base × height, 24 = base × 12  
base = 24 ÷ 12   
= 2 cm

Question 4 [5.6]

D

Combined area = area of square + area of square

Total area =  +  = 225 cm2

Question 5 [5.4]

B

Area = base × height = × 20 × 10   
= 100 cm2

Question 6 [5.7]

C

Volume = 2 × 3 × 4 = 24 cm3

Question 7 [5.7]

A

Edge length of cube = 10 cm

Volume of cube = 103

= 1000 cm3

= 1000 mL

= 1 L

Question 8 [5.8]

D

11:30 pm + 5 hours and 30 minutes   
= 5:00 am the next day, 7September

Question 9 [5.8]

A

3:05 pm – 10:45 am = 4 hours 20 minutes

Question 10 [5.7]

B

Multiple-choice total marks: 10

Short answer section

Question 11 4 marks [5.1, 5.4]

For a rectangle measuring 12 cm by 10 cm, the perimeter is 12 + 10 + 12 + 10 = 44 cm.

The area of the rectangle is 12 × 10 = 120 cm2

Question 12 2 marks [5.1]

2 × 10 cm + 2 × 20 cm = 60 cm

Question 13 2 marks [5.1]

8 m + 8 m + 22 m + 15 m = 53 m

Question 14 2 marks [5.1]

The side lengths of a regular hexagon are equal. Perimeter = 6 × 5 = 30 cm.

Question 15 4 marks [5.1]

(a) 3 × 6 = 18 cm

(b) 50 cm + 40 cm + 30 cm + 40 cm   
= 160 cm

Question 16 2 marks [5.4]



Question 17 4 marks [5.3]

(a) *C* = π*d*   
= π × 4 cm = 12.57 cm ≈ 13 cm

(b) *C* = 2π*r*   
=2 × π × 7 = 43.98 cm ≈ 44 cm

Question 18 2 marks [5.4]

Area of parallelogram = base length × height   
= 20 × 10

= 200 cm2

Question 19 2 marks [5.4]

*A* = (*a* + *b*)*h*

= 

Question 20 4 marks [5.4]

(a) Area = × 10 × 20   
= 100 m2

(b) Area = 10 × 40   
= 400 m2

Question 21 2 marks [5.5]

*A* = π*r*2

= π × 42

= 50.27 cm2

Question 22 2 marks [5.5]

Area = × π × 122

= 113.10 cm2

Question 23 2 marks [5.6]

*A* = 20 × 15 + 20 × 25

= 550 cm2

Question 24 2 marks [5.6]

Shape is equivalent to a circle with radius of 4 cm.

*A* = π*r*2

= π × 42

= 50.27 cm2

Question 25 2 marks [5.7]

*V* = π*r*2*h*

= π × 100 × 40

= 12 566.4 cm3

Question 26 2 marks [5.7]

*V* = (base area) × *h*

= 

= 24 × 20

= 480 m3

Question 27 4 marks [5.7]

(a) Volume = 10 × 10 × 50   
= 5000 cm3

(b) Capacity: 5000 mL

Question 28 3 marks [5.8]

(a) 8:30 am – 15 minutes means that he left home at 8:15 am

(b) 8:30 am + 10 minutes + 120 minutes = 10:40 am

(c) 10:40 am + 30 minutes + 2 × 50 minutes = 12:50 pm

Question 29 3 marks [5.8]

(a) 6:50 am + 4 hours = 10:50 am

(b) 10:15 am+ 4 hours = 1415 or 2:15 pm

(c) 5:20 pm + 4 hours = 2120 or 9:20 pm

Short answer total marks: 50

Extended answer section

Question 30 4 marks [5.3, 5.5]

Diameter of cake tin is 15 cm. Radius is 7.5cm.

(a) Circumference of cake tin is π × 15 = 47.12 cm

(b) Area of cake tin is π × 7.52 = 176.71 cm2

Question 31 4 marks [5.6]

(a) Area = (10 × 40) *+* 2 × (5 × 22)= 620 cm2

(b) Height of white parallelogram = 22 – 10   
= 12 cm  
Area = 40 × (22 – 10)   
= 480 cm2

Question 32 8 marks [5.5]

(a) (i) Area of ring *E* = π × 12 = 3.14 cm2

(ii) Area of ring *D* = π × 22 – π × 12 = 3π = 9.42 cm2

(iii) Area of ring *A* = π × 52 – π × 12 = 9π = 28.27 cm2

(b) Area of dartboard = π × 52 = 25π. Area of ring *E* =    
Ratio of area of ring *E* to area of whole dartboard , so the area of the dartboard is 25 times that of the area of ring *E*.

Question 33 6 marks [5.6]

**(a)** Triangle area   
= 540cm2

**(b)** Area of billiard balls   
= 235.62 cm2

**(c)** Area left = 540 – 235.62  
= 304.38 cm2

Question 34 4 marks [5.7]

(a) Volume = base area × height  


(b) 1 cm3= 1 mL  
785.40 cm3 = 785.4 mL  
1 L= 1000 mL  
785.4 mL = 0.7854 L

Extended answer total marks: 26

TOTAL test marks: 86