Multiple-choice section

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

Question 1 [5.1]

B

Perimeter of the square = 4 × edge length

= 4 × 8 cm

= 32 cm

Question 2 [5.3]

C

*C* = 2π*r*

= 2 × π × 14 = 87.96 cm

Question 3 [5.4]

C

Area = base × height, 36 = base × 12  
base length = 36 ÷ 12 = 3 cm

Question 4 [5.6]

D

Combined area = area of square + area of square

Total area =  +  = 121 + 400 = 521 cm2

Question 5 [5.4]

D

Area = base × height = × 16 × 25   
= 200 cm2

Question 6 [5.7]

C

Volume = 3 × 7 × 5 = 105 cm3

Question 7 [5.7]

C

Edge length of cube = 20 cm

Volume of cube = 203

= 8000 cm3

= 8000 mL

= 8 L

Question 8 [5.8]

A

11:30 pm + 10 hours and 30 minutes   
= 10:00 am the next day, 7September

Question 9 [5.8]

C

12:45 pm to 1:00 pm = 15 minutes

1:00 pm to 3:00 pm – 2 hours

3:00 pm to 3:35 pm = 35 minutes

Total = 15 minutes + 2 hours + 35 minutes

= 2 hours 50 minutes

Question 10 [5.7]

A

1 L = 1000 cm3

2678 cm 3 = 2678/1000= 2.678 L

Multiple-choice total marks: 10

Short answer section

Question 11 4 marks [5.1, 5.4]

For a rectangle measuring 15 cm by 24 cm, the perimeter is 15 + 24 + 15 + 24 = 78 cm

The area of the rectangle is 15 × 24 = 360 cm2

Question 12 2 marks [5.1]

2 × 13 cm + 2 × 33 cm = 92 cm

Question 13 2 marks [5.1]

9 m + 9 m + 17 m + 23 m = 58 m

Question 14 2 marks [5.1]

The side lengths of a regular hexagon are equal. Perimeter = 6 × 8 = 48 cm.

Question 15 4 marks [5.1]

(a) Perimeter = 22 cm + 22 cm + (15 x 4)  
= 22 + 22 + 60  
= 104 cm

(b) Perimeter = 50 cm+ 45 cm+ 45 cm + 37 cm  
= 177 cm

Question 16 2 marks [5.4]



Question 17 4 marks [5.3]

(a) *C* = π*d*   
= π × 15 cm =47.12 cm ≈ 47 cm

(b) *C* = 2π*r*   
=2 × π × 4.5 = 28.27cm ≈ 28 cm

Question 18 2 marks [5.4]

Area of parallelogram = base length × height   
= 26 × 14

= 364 cm2

Question 19 2 marks [5.4]

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

= 

Question 20 4 marks [5.4]

|  |  |
| --- | --- |
| (a) Area = × 19 × 13  = 123.5 m2 | (b) Area = 65 × 12  = 780 m2 |

Question 21 2 marks [5.5]

*A* = π*r*2

= π × 



Question 22 2 marks [5.5]

Area = × π ×   


Question 23 2 marks [5.6]

*A* = 12 × 24 + 24 × 33

= 288 + 396 = 684 cm2

Question 24 2 marks [5.6]

Shape is equivalent to a circle with radius of 5 cm.

*A* = π*r*2

= π × 52

= 78.539 cm2 

Question 25 2 marks [5.7]

*V* = π*r*2*h*

= π × 82 × 55

= 11 058.41 cm3 

Question 26 2 marks [5.7]

*V* = (base area) × *h*

=  = 486 m3

Question 27 4 marks [5.7]

|  |  |
| --- | --- |
| (a) Volume = 37 × 22 × 20 = 16 280 cm3 | (b) Capacity = 16 280 mL |

Question 28 3 marks [5.8]

(a) 8:30 am – 25 minutes means that he left home at 8:05 am

|  |  |
| --- | --- |
| (b) 1st lesson started at 8:50 am Recess 90 minutes later = 1 h 30 min 8:50 am to 9 am= 10 min 9 am to 10 am = 1 hour 10 am to 10:20 am = 20 min Recess started at 10:20 am | (c) 10:20 am to 10:55 am (recess) 1st lesson: 10:55 am to 11 am = 5 minutes 11 am to 11:40 am – 40 min Total time = 45 minutes 2nd lesson:  11:40 am to 12 pm = 20 minutes 12 am to 12:25 pm = 25 min Lunch was at 12:25 pm. |

Question 29 3 marks [5.8]

(a) 4:50 am + 11 hours = 1550 or 3:50 pm

(b) 11:15 am+ 11 hours = 2215 or 10:15 pm

(c) 4:20 pm + 11 hours = 3:20 am

Short answer total marks: 50

Extended answer section

Question 30 2 marks [5.3, 5.5]

Diameter of cake tin is 24 cm. Radius is 12 cm.

(a) Circumference of cake tin is π × 24 = 75.40 cm

(b) Area of cake tin is π × 122 = 452.39 cm2

Question 31 4 marks [5.6]

(a) Area = (13 × 25) + 2 × (3 × 21)   
= 451 cm2

(b) Height of white parallelogram = 21 – 13 = 8 cm  
Area of white parallelogram = 25 × 8   
= 200 cm2

Question 32 8 marks [5.5]

(a) (i) Area of ring *E* = π × 22 = 12.57 cm2

(ii) Area of ring *D* = π × 42 – π × 22 = 12π = 37.70 cm2

(iii) Area of ring *A* = π × 102 -π × 82 =36π = 113.10 cm2

(b) Area of dartboard = π × 102 = 100π. 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   
= 770 cm2

(b) Area of one billiard ball   
Area of 3 billiard balls = 3 × 113.1  
= 339.29 cm2

(c) Area left = 742.5 – 339.29   
= 430.71 cm2

Question 34 4 marks [5.7]

|  |  |
| --- | --- |
| (a) Volume = base area × height | (b) 1 cm3= 1 mL 3015.93 cm3 = 3015.93 mL 1 L= 1000 mL 3015.93 mL = 3.01593 L |

Extended answer total marks: 26

TOTAL test marks: 86