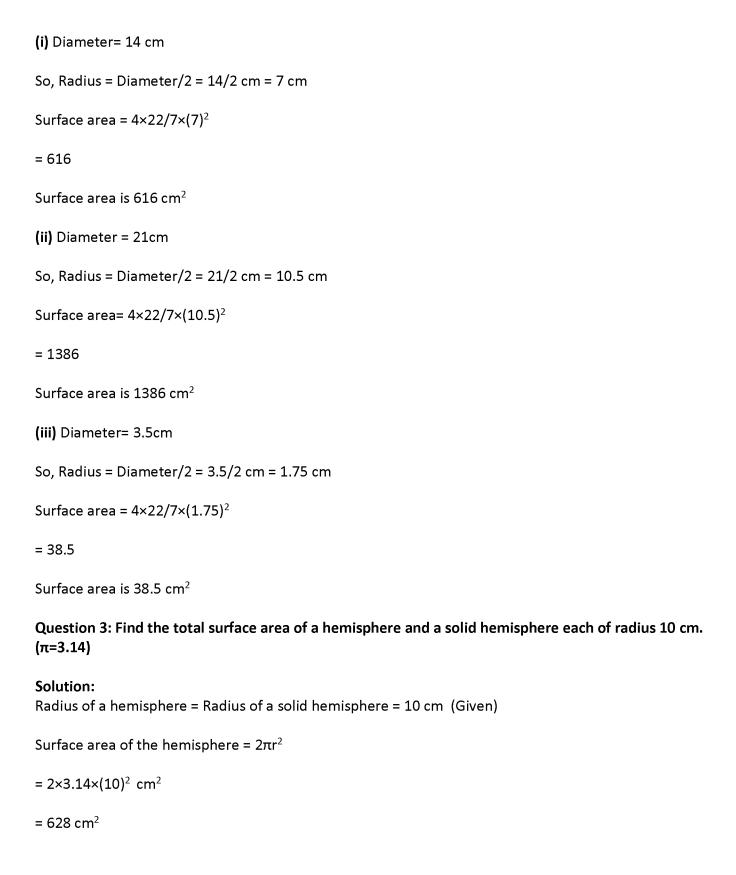
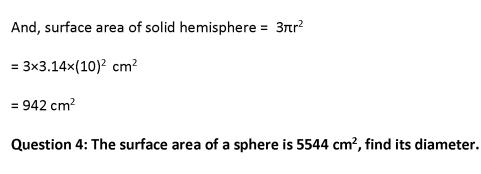
Exercise 21.1

Question 1: Find the surface area of a sphere of radius: (i) 10.5 cm (ii) 5.6 cm (iii) 14 cm Solution: Surface area of a sphere = $4\pi r^2$ Where, r = radius of a sphere (i) Radius = 10.5 cm Surface area = $4 \times 22/7 \times (10.5)^2$ = 1386 Surface area is 1386 cm² (ii) Radius= 5.6 cm Surface area = $4\times22/7\times(5.6)^2$ = 394.24Surface area is 394.24 cm² (iii) Radius = 14 cm Surface area = $4\times22/7\times(14)^2$ = 2464 Surface area is 2464 cm² Question 2: Find the surface area of a sphere of diameter: (i) 14 cm (ii) 21 cm (iii) 3.5 cm Solution: Surface area of a sphere = $4\pi r^2$ Where, r = radius of a sphere





Solution:

Surface area of a sphere is 5544 cm²

Surface area of a sphere = $4\pi r^2$

So,
$$4\pi r^2 = 5544$$

$$4\times22/7\times(r)^2 = 5544$$

$$r^2 = (5544 \times 7)/88$$

$$r^2 = 441$$

or r = 21cm

Now, Diameter=2(radius) = 2(21) = 42cm

Question 5: A hemispherical bowl made of brass has inner diameter 10.5 cm. Find the cost of tin plating it on the inside at the rate of Rs.4 per 100 cm².

Solution:

Inner diameter of hemispherical bowl = 10.5 cm

So, radius = Diameter/2 = 10.5/2 cm = 5.25 cm

Now, Surface area of hemispherical bowl = $2\pi r^2$

$$= 2 \times 3.14 \times (5.25)^2$$

= 173.25

So, Surface area of hemispherical bowl is 173.25 cm²

and Volume of A Sphere
Find the cost: Cost of tin plating 100 cm ² area= Rs.4 (given)
Cost of tin plating 173.25 cm ² area = Rs. 4×173.25100 = Rs. 6.93
Therefore, cost of tin plating the inner side of hemispherical bowl is Rs.6.93. Answer!!
Question 6: The dome of a building is in the form of a hemisphere. Its radius is 63 dm. Find the cost of painting it at the rate of Rs. 2 per sq m.
Solution:
Radius of hemispherical dome = 63 dm or 6.3 m
Inner surface area of dome = $2\pi r^2$

 $=2\times3.14\times(6.3)^2$

Now find the cost:

So, Inner surface area of dome is 249.48 \mbox{m}^2

Therefore, cost of painting 249.48 m^2 = Rs. (249.48×2) = Rs.498.96.

Cost of painting $1m^2 = Rs.2$ (given)

= 249.48