Exercise VSAQs

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Question 1: Find the surface area of a sphere of radius 14 cm.

Solution:

Radius of a sphere (r) = 14 cm

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

= $4 \times (22/7) \times 14^2$ cm^2

= 2464 cm^2

Question 2: Find the total surface area of a hemisphere of radius 10 cm.

Solution:

Radius of a hemisphere (r) = 10 cm

Total surface area of a hemisphere = $3\pi r^2$

= $3 \times (22/7) \times 10^2$ cm^2

= 942 cm^2

Question 3: Find the radius of a sphere whose surface area is 154 cm^2.
Solution:

Surface area of a sphere = 154 cm^2

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

So, $4\pi r^2 = 154$

$4 \times 22/7 \times r^2 = 154$

$r^2 = 49/4$

or $r = 7/2 = 3.5$

Radius of a sphere is 3.5 cm.

Question 4: The hollow sphere, in which the circus motor cyclist performs his stunts, has a diameter of 7 m. Find the area available to the motorcyclist for riding.

Solution:
Diameter of hollow sphere = 7 m

So, radius of hollow sphere = 7/2 m = 3.5 cm

Now,
Area available to the motorcyclist for riding = Surface area of a sphere = $4\pi r^2$

= $4 \times (22/7) \times 3.5^2$ m^2

= 154 m^2

Question 5: Find the volume of a sphere whose surface area is 154 cm2.

Solution:

Surface area of a sphere = 154 cm2

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

So, $4\pi r^2 = 154$

4 x 22/7 x $r^2 = 154$

or $r^2 = 49/4$

or r = 7/2 = 3.5

Radius (r) = 3.5 cm

Now,
Volume of sphere = $4/3\ \pi\ r^3$

= $(4/3)\ \pi \times 3.5^3$

= 179.66

Therefore, Volume of sphere is 179.66 cm^3.