

CHAPTER-11 | Surface Areas and Volumes

QUIZ
PART-3

1. A right circular cone is formed by rotating a:

- A. Square
- B. Rectangle
- C. Right-angled triangle
- D. Circle (C)

Explanation: A cone is formed by rotating a right-angled triangle about its perpendicular.

2. The two surfaces of a cone are:

- A. Circular surface and lateral surface
- B. Square surface and base
- C. Triangle surface and lateral surface
- D. Base and slant height (A)

Explanation: A cone has a circular base and lateral (curved) surface.

3. The formula for the curved surface area of a cone is:

- A. πr^2
- B. $\pi r(\ell + r)$
- C. $\pi r\ell$
- D. $2\pi r\ell$ (C)

Explanation: Curved surface area = $\pi r\ell$, where r is the radius and ℓ is the slant height.

4. The total surface area of a cone is:

- A. $\pi r^2 + \pi r\ell$
- B. $2\pi r + \ell$
- C. $\pi r(\ell + r)$
- D. $\pi r^2 + h$ (C)

Explanation: Total surface area = $\pi r(\ell + r)$, including base and curved surface.

5. The slant height (ℓ) of a cone is calculated as:

- A. $\sqrt{r^2 + h^2}$
- B. $\sqrt{r^2 - h^2}$
- C. $r \times h$
- D. $r + h$ (A)

Explanation: $\ell = \sqrt{r^2 + h^2}$, derived from the Pythagorean theorem.

6. The slant height of a cone is given as 10 cm and the radius is 7 cm. The curved surface area is:

- A. 440 cm^2
- B. 660 cm^2
- C. 880 cm^2
- D. 1100 cm^2 (B)

Explanation: Curved surface area = $\pi r\ell = 3.14 \times 7 \times 10 = 660 \text{ cm}^2$.

7. If the radius of a cone is 5 cm and the total surface area is 660 cm^2 , the slant height is:

- A. 37 cm
- B. 40 cm
- C. 7 cm
- D. 42 cm (A)

Explanation: Using the surface area formula, slant height ℓ is calculated as 37 cm.

8. The full surface area of a cone with radius 3 cm and height 4 cm is:

- A. $24\pi \text{ cm}^2$
- B. $3\pi \text{ cm}^2$
- C. $40\pi \text{ cm}^2$
- D. $36\pi \text{ cm}^2$ (D)

Explanation: Using the surface area formula, the full surface area is $36\pi \text{ cm}^2$.

9. A wire is bent to form a circle of radius 28 cm. If the wire is bent into a square, the side of the square will be:

- A. 44 cm
- B. 40 cm
- C. 30 cm
- D. 88 cm (A)

Explanation: The length of the wire (circumference) is equal to the perimeter of the square, giving side = 44 cm.

10. The volume of a cone is calculated using the formula:

- A. $\frac{1}{3} \times \pi r^2 h$
- B. $\pi r^2 h$
- C. $\frac{2}{3} \times \pi r^2 h$
- D. $\pi r^2 h/2$ (A)

Explanation: The volume of a cone is given by $\frac{1}{3} \times \pi r^2 h$.