Exercise 6.3

1. The radius and vertical height of a cone are 8 cm and 15 cm. respectively. Find its curved surface area. (Use $\pi = 22/7$)
2. The circumference of the base of a 12 m high cone is 22 m. Find the volume of the cone.
3. The radius and slant height of cone are in the ratio 7:13 and its curved surface area is 286 cm^2. Find its radius. (Use $\pi = 22/7$)
4. Find the ratio of surface areas of two cones if the diameter of their bases are equal and slant heights are in the ratio 4 : 3.
5. The curved surface area of a cone exceeds the base area by 88 cm^2. Its slant height exceeds the base radius by 4 cm. Find the radius of the base.
6. A right circular conical vessel whose internal radius is 21 cm and height 15 cm is full of water. If water is poured into a right circular cylindrical vessel with internal radius 14 cm, find the height to which the water rises.
7. The curved surface area of a c s 70 cm. Find its slant height. = 22/7)
8. A cone of height 8 cm has a Find its volume. = 3.14)
9. How many metres of canvas 1 conical tent whose base radius is 17.
10. The area of the base of a righ eight is 12 cm, find its volume and th = 22/7)
11. The height of a cone is 5 cm. olume is sixteen times its volume and
12. From a solid cylinder whose conical cavity of height 8 cm and of base volume of the remaining solid correct π = 22/7)
13. A circus tent consists of a cylindrical base surmounted by a conical roof. The radius of the cylinder is 20 m. The heights of the cylindrical and conical portions are respectively 42 m and 21 m. Find the volume of air contained.
14. Find the volume of the largest right circular cone that can be cut out of a cube whose edge is 9 cm.
15. A conical vessel with a radius 10 cm and height 48 cm is filled with water. If the water is poured into a cylindrical vessel whose radius is 20 cm, find the level of the water in it.
16. A solid right circular cone of height 20 cm and base radius 15 cm is melted and casted into smaller cones of equal sizes of height 5 cm and base radius 1.5 cm. Find how many cones are made?
17. A conical tent is to accommodate 11 persons. Each person must have 4 m^2 of the space on the ground and 20 m^3 of air to breathe. Find the height of the cone.
18. The volume of a cone is the same as that of a cylinder whose height is 9 cm and diameter 40 cm. Find the radius of the base of cone if its height is 108 cm. (Use $\pi = 22/7$)
19. How many metres of cloth 1.1 m wide will be required to make a conical tent whose vertical height is 12 m and base radius is 16 m? Find also the cost used at the rate of ₹ 14 per metre.

20. A cylindrical iron pillar 42 dm high and 5 dm in radius is surmounted by a cone 7 dm high. Find the weight of the iron pillar, supposing that $1 dm^3$ of iron weigh 9.6 gm.

21. A heap of a wheat is in the form of a cone of diameter 9 m and height 3.5 m. Find its volume. How much canvas cloth is required to just cover the heap? (Use $\pi = 3.14$)

22. Two cones have their heights in the ratio 1:3 and the radii of their bases in the ratio 3:1. Show that their volumes are in the 3:1.

23. A right triangle with sides 3 cm and 4 cm is revolved around its hypotenuse. Find the volume of the double cone thus formed.

24. Two right circular cones X and Y are made. X having three times the radius of Y and Y having half the volume of X. Find the ratio of heights of X and Y.

25. Ice cream completely filled in a cylinder of diameter 35 cm and height 32 cm is to be served by completely filling identical disposable cones of diameter 4 cm and height 7cm. Find the maximum number of persons that can be served this way.

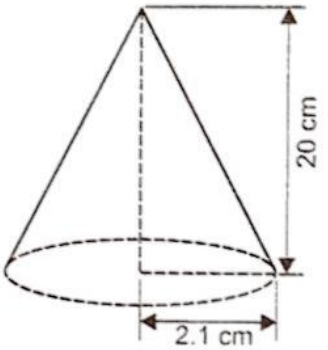
26. A corn cob (see Fig.), shaped somewhat like a cone, has the radius of its broadest end as 2.1 cm and length as 20 cm. If each 1 cm^2 of the surface of the cob carries an average of four grains, find how many grains you would find on the entire cob? [*NCERT*]

[**Hint:** Since the grains of corn are grow on the curved surface area of the corn cob.

$\therefore$ Total number of grains on the corn cob = Curved surface of the corn cob × No. of grains of corn on 1 cm^2

$= \pi rl \times 4 = \pi r\sqrt{r^2 + h^2} \times 4$ here, $r = 2.1$ cm and $h = 20$ cm]

(*i*)



(*ii*)

Answers

1. 427.43 cm^2	**2.** 154 m^3	**3.** 7 cm	**4.** 4 : 3
5. 7 cm	**6.** 11.25 cm	**7.** 37 cm	**8.** 301.44 cm^3
9. 814 m	**10.** 314 cm^3, 204.1 cm^2		**11.** 20 cm
12. 603.4 cm^3	**13.** 61600 m^3	**14.** 190.93 cm^3	**15.** 4 cm
16. 400	**17.** 15 m	**18.** 10 cm	

19. $914\frac{2}{7}$ metres; ₹ 12800

20. 33.44 kg

21. 74.18 m^3, 80.54 m^2

23. 30.17 cm^3

24. 1 : 18

25. 1050

26. 531 (approx.)