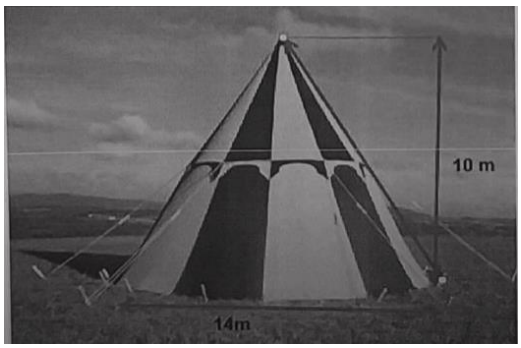
INDIAN SCHOOL AL WADI AL KABIR

Class IX, Mathematics

Worksheet- SURFACE AREA AND VOLUME

OBJECTIVE TYPE (1 Mark)

Q.1	A conical tent is 15 m high and the radius of its base is 20 m. The cost of the canvas required to make the tent at the rate of ₹ 7 per m^2 is							
	A	₹ 10,000	B	₹12,000	C	₹11,000	D	₹9,000
Q.2	A hemispherical bowl is made of steel 0.25 cm thick. If the inner radius of the bowl is 3.25 cm, then the outer curved surface area of the bowl is							
	A	154 cm^2	B	77cm^2	C	115.5cm^2	D	38.5cm^2
Q.3	The curved surface area of a cone is 12320 sq. cm, if the radius of its base is 56 cm, then its height is							
	A	24 cm	B	25 cm	C	42 cm	D	45 cm
Q.4	The radius of two similar right circular cones are 2 cm and 6 cm. the ratio of their volumes is							
	A	1:3	B	1:9	C	9:1	D	1:27
Q.5	How much ice-cream can be put into a cone with base radius 3.5 cm and height 12 cm?							
	A	176cm^3	B	154cm^3	C	124cm^3	D	254cm^3
Q.6	The volume of a sphere is 38808 cu.cm. the curved surface area of the sphere (in cm^2 is							
	A	5544	B	1386	C	8316	D	4158
Q.7	The ratio of the radii of two spheres whose volumes are in the ratio 64:27 is							
	A	8:3	B	16:9	C	10:7	D	4:3
Q.8	The volume of a solid hemisphere is 1152πcm^3. Find its curved surface area.							
	A	288πcm^2	B	248πcm^2	C	828πcm^2	D	144πcm^2
SECTION B (2mark)								
Q.9	A metallic sphere is of radius 4.9 cm. if the density of the metal is 7.8g/cm^2, find the mass of the sphere. (take $\pi=\frac{22}{7}$)							

Q.10	A spherical ball is divided into two equal halves. If the curved surface area of each half is 56.52 sq.cm, find the volume of the spherical ball. (take π=3.14)
Q.11	Find the capacity in litres of a conical vessel having height 8 cm and slant height 10 cm. (take π=3.14)
Q.12	The surface area of the sphere is 154cm^2. Find its volume.
Q.13	Determine the volume of a conical tin having radius of the base as 30 cm and its slant height is 50 cm. (Use π=3.14)
	SECTION C (3 MARKS)
Q14.	A right triangle PQR with sides 10 cm, 24 cm and 26 cm is revolved about the side 24 cm. Find the volume and curved surface are of the solid so obtained. (take π=3.14)
Q15.	The largest sphere is carved out of a cube of side 7 cm. Find the volume of the sphere. (take π=3.14)
Q16.	A corn cob shaped somewhat like a cone has the radius of its broadest end as 2.1 cm and length as 20 cm. If each 1cm^2 of the surface of the cob carries an average of four grains, find how many grains you would find on the entire cob.
Q17.	The total cost of making a spherical ball is ₹33,957 at the rate of ₹7 per cu. m. What will be the radius of the spherical ball? Also find its surface area.
	SECTION D (4marks)
Q18.	CASE STUDY: Once four friends Rahul, Arun, Ajay and Vijay went for a picnic at a hill station. Due to peak season they did not get a proper hotel in the city. The weather was fine so they decided to make a conical tent at a park. They were carrying 300m^2 of cloth with them. As shown in the figure they made the tent with height 6 m and radius 8 m. The remaining cloth was used for the floor.  i) How much cloth was used for the tent (excluding the floor)? ii) How much cloth was left with them? iii) If the cost of cloth per $m^2$is ₹150, then find the total cost for making the tent (excluding the floor)?
Q19.	A hemispherical bowl of internal radius 9 cm, is full of water, this water is to be filled in cylindrical bottles of diameter 3 cm and height 4 cm. find the number of bottles needed to fill the the whole water of the bowl. (take $\pi=\frac{22}{7}$)

Q20.	A solid sphere of radius 3 cm is melted and recast into small spherical balls each of diameter 0.6 cm. Find the number of small balls thus obtained.

Answers

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	1	C	**2**	B	**3.**	C	**4**	D
	5	B	**6**	A	**7**	D	**8**	A
	9	3845.4g	**10**	$113.04cm^3$	**11**	0.3014 litres	**12**	$179.67cm^3$
	13	$37680cm^3$	**14**	$2512cm^3$ $816.4cm^2$	**15**	$179.50cm^3$	**16**	531 approx
	17	10.5 m, 1386 m^2	**18**	i)$251.2m^2$ ii)$48.8\ m^2$ iii) ₹37,680	**19**	54 bottles	**20**	1000

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