

By. Er. Dharmendra Sir

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DPM CLASSES

6th to 10th (Math's & Science), 11th & 12th (Physics, Chemistry, Math's)

TEST - PAPER (CBSE/NCERT)

SURFACE AREAS AND VOLUMES

SESSION -2024-25

CLASS - 10th

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Time : 1 hr :- Surface area and volumes :- mm!

Q.1. A medicine capsule is in the shape of a cylinder with two hemisphere stuck to each of ends. The length of the entire capsule is 14 mm and the diameter of the capsule is 5 mm. Find its surface area.



Q.2. A spherical glass vessel has a cylindrical neck 8 cm long, 2 cm in diameter, the diameter of the spherical part is 8.5 cm. By measuring the amount of water it holds, a child finds its volume to be 345 cm^3 . Check whether she is correct, taking the above as inside measurement and $\pi = 3.14$



Q.3. A pen stand made of wood is in the shape of a cuboid with four conical depressions to hold pens. The dimensions of the cuboid are 15 cm by 10 cm by 3.5 cm. The radius of each of depressions is 0.5 cm and the depth is 1.4 cm. Find the volume of wood in the entire stand.

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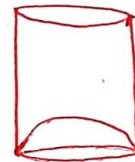
Q. 4. A toy is in the form of a cone of radius 3.5 cm mounted on a hemisphere of same radius. The total height of the toy is 15.5 cm. Find the total surface area of the toys.



Q. 5. From a solid cylinder whose height is 2.4 cm, and diameter 1.4 cm, a conical cavity of same height and same diameter is hollowed out. Find the total surface area of the remaining solid to the nearest cm^2 .



Q. 6. A juice seller was serving his customers using glasses as shown in fig. The inner diameter of the cylindrical glass was 5 cm but the bottom of the glass had a hemispherical raised portion which reduced the capacity of the glass. If the height of a glass was 10 cm, find the apparent capacity of the glass and its actual capacity ($\pi = 3.14$)



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Q.7. A Gulab Jamun contains sugar syrup upto about 30% of its volume. Find approximately how much syrup would be found in 45 gulab Jamun each shaped like a cylinder with two hemisphere end with length 5cm and diameter 2.8 cm.



Q.8. A solid iron pole consist of a cylinder of height 220cm and base diameter 24cm which is surrounded by another cylinder of height 60 cm and radius 8cm. Find the mass of the pole, given that 1 cm^3 of iron approximately 8 g mass ($\pi = 3.14$)



Q.9. A solid is in the shape of a cone standing on a hemisphere with both their radii being equal to 1cm and height of the cone is equal to its radius. Find the volume of the solid in terms of π .

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Q. 10. A hemisphere tank full of water is emptied by a pipe at the rate of $3\frac{4}{7}$ litre per second. How much time will it take to empty half the tank, if it is 3 m in diameter ($\pi = \frac{22}{7}$)



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