Uncovered Module System (UMS)

Chapter Name – Mensuration

Class- 8th

Remember & Understanding Based Questions

Ques.1) Find the area of a triangle whose base is 4 cm and altitude is 6 cm.
a) $14cm^2$ b) $12cm^2$ c) $10cm^3$ d) $16cm^2$

Ques.2) A right triangle with sides 3 cm, 4 cm and 5 cm is rotated about the side of 3 cm .The volume of the solid so generated is
a) 18π cm ^{3} b) 21π cm ^{3} c) 16π cm ^{3} d) 15π cm ^{3}

Ques.3) A hollow sphere of internal and external radii respectively, 2 cm and 4 cm is melted into a solid cone of base radius 4 cm. Find the height of the cone.
a) 7 cm b) 12 cm c) 14 cm d) 21 cm

Ques.4) A cube of side 4 cm is cut into 1 cm cubes. What is the ratio of the surface areas of the original cube and cut - out cubes?
a) 1 : 4 b) 1 : 6 c) 1 : 2 d) 1 : 3

Ques.5) _____of a solid is the sum of the areas of its faces.
a) Perimeter b) Area c) Volume d) Surface area

Ques.6) The surface area of the four sides of a cubical dice is$4cm^2$ .What must be the length of its edge?
a) 4 cm b) 2 cm c) 3 cm d) 1 cm

Ques.7) Three cubes each of side 10 cm are joined end to end. The surface area of the resultant figure is
a) 1400 cm^2 b) 1500 cm^2 c) 1450 cm^2 d) $1550cm^2$

Ques.8) Three cubes whose edges are 3 cm, 4 cm and 5 cm respectively are melted to form a single cube. Find the surface area of the new cube.
a) 210 cm^2 b) 216 cm^2 c) 224 cm^2 d) 213 cm^2

Ques.9) The length of the longest rod that can be fit in a cubical room of 4 cm side is:
a) 5.196 m b) 8.66 m c) 7.264 m d) 6.928 m

Ques.10) A cylindrical tower is 18 metres in diameter and 21 metres high. The cost of white washing its curved surface at₹ 20 per m ^{2} is _____.
a) ₹ 23760 b) ₹ 15860 c) ₹ 20680 d) ₹ 21065

Ques.11) How many cubes of sides 6 cm can be fitted into a cuboid of volume 216 m3 ?
a) 105 b) 103 c) 104 d) 106

Ques.12) Find the volume of the largest right circular cone that can be cut out of cube whose edge is 9 cm:
a) 181.25 cm^3 b) 189.5 cm^3 c) 190.93 cm^3 d) 169 cm^3

Ques.13) The surface area of a cube is 486 sq m, then its volume is
a) 879 m^3 b) 625 m^3 c) 781 m^3 d) 729 m^3

Ques.14) 1L = _____ cm^3
a) 10 b) 100 c) 1000 d) 1

Ques.15) $1cm^3$ = _____ mL
a) 1 b) 10 c) 2 d) 100

Ques.16) A circular well with a diameter of 2 metres, is dug to a depth of 14 meters. What is the volume of the earth dug out?
a) 32 m^2 b) 40 m^2 c) 44 m^2 d) 36 m^2

Ques.17) The radii of two cylindrical vessels are in the ratio of 1 : 3 and their heights are in the ratio of 1 : 2. The ratio of their volumes is

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a) 1 : 6 b) 1 : 3 c) 1 : 18 d) 1 : 36

Ques.18) If the volume of a cube is divided by its surface area, the result is2.5 cm.What is the length of the edge of the cube?
a) 15 cm b) 12 cm c) 20 cm d) 10 cm

Ques.19) Find the length of each side of a cube, if its volume is 512 cm^3 .

Ques.20) A covered wooden box has the inner measures as 125cm, 55cm and 25cm and thickness of wood is 2.5cm. Find the volume of the wood.

Ques.21) Fill in the Blanks

1. Opposite faces of a cuboid are _____ in area.
2. If the area of a face of a cube is 10 cm^2 , then the total surface area of the cube is _____ cm^2 .
3. _____surface area of room = Area of 4 walls.
4. All six faces of a cuboid are _____ in shape and of _____ area.
5. Two cylinders of equal volume have heights in the ratio 1 : 9. The ratio of their radii is _____.

Ques.22) State True & False.

1. All six faces of a cuboid are rectangular in shape and of different areas
2. Volume of a solid is the measurement of space occupied by it.
3. The areas of any two faces of a cube are equal.
4. Lateral Surface Rea of Room = Area of four walls.
5. The surface area of a cuboid formed by joining face to face 3 cubes of side x is 3 times the surface area of a cube of side x .
6. The surface area of a cube formed by cutting a cuboid of dimensions $2\times 1\times 1$ in 2 equal parts is 2 sq. units.
7. Total Surface Area of a cylinder of radius rand height his$2\pi r(r+h)$.
8. Curved Surface Area of a cylinder of radius r and height h is$2\pi rh$.
9. Two cylinders with equal volume will always have equal surface area.
10. If two cylinders of equal volume have heights in the ratio of 1 : 9, then the ratio of their radii is 2 : 1.
11. Two cuboids with equal volumes will always have equal surface areas.

Analytical Based Questions

Ques.1) Assertion (A): The area of a trapezium is 360 sq. cm. The ratio of the parallel sides is 3 : 1. If the distance between the parallel sides is 30 cm. then the length of parallel sides are 18cm and 6 cm.

Reason (R): Area of trapezium = $\frac{1}{2}\times$ sum of parallel sides $\times$ height.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

Ques.2) Assertion (A): The area of a rhombus is 84 sq. m.If its perimeter is 40 m. then its altitude is 8.4 m.
Reason (R): Area of parallelogram = base $\times$ height.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

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Ques.3) Assertion (A): A square sheet of side 6 m is cut off from a rectangular sheet of dimensions 12m by 10 m. The area of remaining sheet is 84 m^2 .

Reason (R): Area is the part of plane occupied by the closed figure.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

Ques.4) Assertion (A): The edge of the cube whose total surface area is 26.46 sq.m, is 2.1m.

Reason (R): The total surface area of cube having side ais $6a^2$.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.\

Ques.5) Assertion (A): The total surface area of cuboid of length 30 cm, breadth 18 cm and height 22 cm is 3198 cm^2 .

Reason (R): To find the total surface area of cuboid, we find the sum of the areas of all six surfaces.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

Ques.6) Assertion (A): The lateral surface area of cylinder having diameter 28cm and height 8 cm is 704cm^2 .

Reason (R): The total surface area of cylinder is 2 π r(r + h). where r is the radius and h is height of cylinder.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

Ques.7) Assertion (A): The edge of a cube, if it's volume is 3375m^3 is 15m.

Reason (R): The space occupied by a. 3 dimensional object is called volume.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

Ques.8) Assertion (A): The height of a cuboid with area of the base as 284 sq. cm and volume as 6248 cu.cm is 11 cm.

Reason (R): The volume of cuboid is (length × breadth × height) cm.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

Ques.9) Assertion (A): If the total surface area of a cube is 1176 sq. m, the volume of cube is 2744 cu. m.

Reason (R): The space occupied by a 3 dimensional object is called volume.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

Ques.10) A plate of metal 1 cm thick, 9 cm broad, 81 cm long is melted into a cube. The difference in the surface area of two solids is

a) 1050 cm^2 b) 1150cm^2 c) 1052 cm^2 d) 1152 cm^2

Ques.11) Find the lateral surface area of a cuboid whose length, breadth and height are in the ratio of 4 : 3 : 2 and volume of the cuboid is 5184 m^3 .

a) 1008 m^2 b) 1016 m^2 c) 1408 m^2 d) None of these

Ques.12) The dimensions of a rectangular iron box arel× w × h. How many times will the surface area of the iron box increase, if all its dimensions are doubled?

a) 3 times b) 5 times c) 8 times d) 4 times

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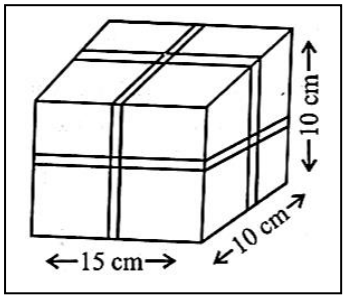
Ques.13) What is the base radius of the cylinder, if a44 in.long and20 in. the broad rectangular tin sheet is rolled along its length to form the cylinder by making the opposite edges just touch each other?
a) 14 inch b) 7 inch c) 12 inch d) 11 inch

Ques.14) A box tied by a ribbon, as shown in the figure, is to be presented as a gift. After allowing an additional length of 10 cm. for the Knot, length of the ribbon required is



a) 80 cm b) 150 cm c) 70 cm d) 140 cm

Ques.15) A room has a length 8 m and breadth 6 m. If the cost of painting its four walls at the rate of 80 per m^2 is ₹ 11200, find the height of the room.
a) 5 m b) 6 m c) 10 m d) 8 m

Ques.16) The base area of a cylindrical wooden block is113.04 cm^2 and its height is10 cm.What is its surface area?
a) 730 cm^2 b) 602.04 cm^2 c) 620.73cm^2 d) 610.73cm^2

Ques.17) If the height of a cylinder becomes $\frac{1}{4}$ of the original height and the radius is doubled, then which of the following will be true?
a) Curved surface area of the cylinder will be doubled
b) Curved surface area will be $\frac{1}{4}$ of the original curved surface
c) Curved surface area of the cylinder will remain unchanged
d) Curved surface area of the cylinder will be halved

Ques.18) Find the volume of a box, which is in the form of a rectangular prism, with a length of 6 in., a height of 3 in.and width of 5 in.
a) 100 in^3 b) 90 in^3 c) 95 in^3 d) 80 in^3

Ques.19) The surface areas of the six faces of a rectangular solid are 16, 16, 32, 32, 72 and 72 sq cm. The volume of the solid (in cm^3) is
a) 2592 b) 480 c) 384 d) 192

Ques.20) Ramesh has three containers.

1. Cylindrical container A having radius r and height h.
2. Cylindrical container B having radius 2r and height $\frac{1}{2}h$.
3. Cuboidal container C having dimensions $r \times r \times h$.

The arrangement of the containers in the increasing order of their volumes is
a) A, B, C b) Cannot be arranged c) B, C, A d) C, A, B

Ques.21) A carpenter makes a box that has a volume of 13400 cm^3 . The base has an area of 670 cm^2 . What is the height of the box?

Ques.22) A river 2 m deep and 45 m wide is flowing at the rate of 3 km per hour. Find the amount of water in cubic meters that run into the sea per minute.

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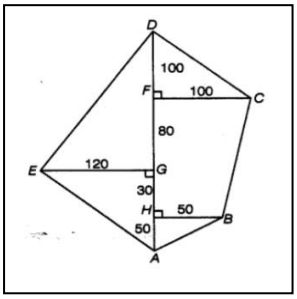
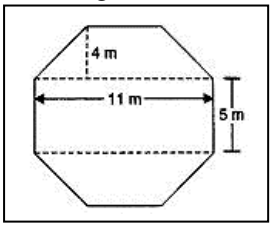
Ques.23) The length, breadth, and height of a cuboidal reservoir are 7m, 6m and 15 m respectively. 8400 L of water is pumped out from the reservoir. Find a fall in the water level in the reservoir.

Ques.24) Water flows from a tank with a rectangular base measuring 80 cm× 70 cm into another tank with a square base of side 60 cm. If the water in the first tank is 45 cm deep, how deep will it be in the second tank?

Ques.25) Find the area of the following fields. All dimensions are in metres:



Ques.26) Top surface of a raised platform is in the shape of a regular octagon as shown in the figure. Find the area of the octagonal surface.



Ques.27) Find the area of polygon ABCDEF, if AD = 18cm, AQ = 14 cm, AP = 12 cm, AN = 8 cm, AM = 4 cm, and FM, EP, QC and BN are perpendiculars to diagonal AD.

Ques.28) In a building, there are 24 cylindrical pillars. The radius of each pillar is 28 cm and height is 4 m. Find the total cost of painting the curved surface area of all pillars at the rate of₹ 8 per m^2 .

Ques.29) Given a cylindrical tank, in which situations will you find surface area and in which situations volume.
(a) To find how much it can hold.
(b) Number of cement bags required to plaster it.

Ques.30) A rectangular piece of paper $11cm \times 4cm$ is folded without overlapping to make a cylinder of height 4 cm. Find the volume of the cylinder.

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