

Q1. A conical flask has base radius 'a' cm and height 'h' cm. It is completely filled with milk. The milk is poured into a cylindrical thermos flask whose base radius is 'p' cm. What will be the height of the solution level in the flask?

- (a)  $\frac{a^2 h}{3p^2}$  cm
- (b)  $\frac{3hp^2}{a^2}$  cm
- (c)  $\frac{p^2}{3h^2}$  cm
- (d)  $\frac{3a^2}{hp^2}$  cm

Q2. A cylindrical tub of radius 12 cm contains water to a depth of 20 cm. A spherical iron ball is dropped into the tub and thus the level of water is raised by 6.75 cm. What is the radius of the ball?

- (a) 6 cm
- (b) 9 cm
- (c) 8 cm
- (d) None of these

Q3. A toy is in the form of a cone mounted on a hemisphere of radius 3.5 cm. The total height of the toy is 15.5 cm. Find the total surface area (use  $\pi = 22/7$ ).

- (a) 137.5 cm<sup>2</sup>
- (b) 214.5 cm<sup>2</sup>
- (c) 154 cm<sup>2</sup>
- (d) 291.5 cm<sup>2</sup>

Q4. A cylindrical container is filled with ice cream. Its diameter is 12 cm and height is 15 cm. The whole ice cream is distributed among 10 children in equal cones having hemispherical tops. If the height of the conical portion is twice the diameter of its base, the diameter of the ice cream cone is:

- (a) 8 cm
- (b) 5 cm
- (c) 7 cm
- (d) 6 cm

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Q5. A circus tent is cylindrical to a height of 3 m and conical above it. If the diameter of the base is 140 m and the slant height of the conical portion is 80 m, the length of canvas 2 m wide required to make the tent is:

- (a) 8960 m
- (b) 9660 m
- (c) 9460 m
- (d) 9860 m

Q6. The ratio between the length and breadth of a rectangular park is 3 : 2. If a man cycling along the boundary of the park at the speed of 12 Km/h completes one round in 8 minutes, then the area of the park in sq 3m is:

- (a) 15360
- (b) 153600
- (c) 30720
- (d) 307200

Q7. A metal sheet 27 cm long, 8 cm broad and 1 cm thick is melted into a cube. The difference between the curved surface area of the two solids, is:

- (a)  $76 \text{ cm}^2$
- (b)  $74 \text{ cm}^2$
- (c)  $78 \text{ cm}^2$
- (d)  $79 \text{ cm}^2$

Q8. A shuttlecock used for playing badminton has the shape of a frustum of a cone mounted on a hemisphere. The external diameters of the frustum are 5 cm and 2 cm, the height of the entire shuttlecock is 7 cm. The external surface area of the shuttlecock is:

- (a)  $67.98 \text{ cm}^2$
- (b)  $74.26 \text{ cm}^2$
- (c)  $70 \text{ cm}^2$
- (d)  $72 \text{ cm}^2$

Q9. The dimensions of a room are 10 m × 7 m × 5 m. There are 2 doors and 3 windows in the room. The dimensions of the doors are 1 m × 3 m. One window is of size 2 m × 1.5 m and the other two windows are size 1 m × 1.5 m. The cost of painting the walls at Rs. 3 per  $\text{m}^2$  is:

- (a) Rs. 578.50
- (b) Rs. 474
- (c) Rs. 684
- (d) Rs. 894

Q10. Two rectangular sheets of paper, each 30 cm × 18 cm are made into two right circular cylinders, one by rolling the paper along its length and the other along the breadth. The ratio of the volumes of the two cylinders, thus formed, is:

- (a) 2 : 1
- (b) 3 : 2
- (c) 4 : 3
- (d) 5 : 3

Q11. Rohit earns an interest of Rs. 1656 for the third year and Rs. 1440 for the second year on the same sum. Find the rate of interest if it is lent at compound interest.

- (a) 18%
- (b) 12%
- (c) 15%
- (d) None of these

Q12. The population of a town increases annually by 25%. If the present population is one crore, then what is the difference between the population 3 years ago and 2 years ago?

- (a) 25,00,000
- (b) 12,80,000
- (c) 15,60,000
- (d) None of these

Q13. Anuj has deposited certain amount in the bank to earn compound interest at 10% per annum. The difference in Compound Interest for 3<sup>rd</sup> and 2<sup>nd</sup> years is Rs. 1,100. What amount has Anuj deposited?

- (a) Rs. 10000
- (b) Rs. 11000
- (c) Data inadequate
- (d) None of these

Q14. Divide Rs. 1301 between A and B, so that the amount of A after 7 years is equal to the amount of B after 9 years, the interest being compounded at 4% per annum.

- (a) Rs. 676 and Rs. 625
- (b) Rs. 650 and Rs. 651
- (c) Rs. 670 and Rs. 631
- (d) Rs. 660 and Rs. 630

Q15. Equal amounts of each Rs. 43,892 is lend to two persons for 3 years. One at the rate of 30% S.I. and second at the rate of 30% C.I. annually. By how much percent the C.I. is greater than the simple interest received in this 3 years duration?

- (a) 23%
- (b) 33%
- (c) 33.33%
- (d) None of these

Q16. Shudhir invested Rs. 16000 in a scheme which earned him simple interest @ 15% per annum. After two years he withdrew the principal amount plus interest and invested the entire amount in another scheme for two years, which earned him compound interest @ 12% per annum. What would be the total interest earned by Sudhir at the end of 4 years?

- (a) Rs. 9792
- (b) Rs. 10152.11
- (c) Rs. 9012.14
- (d) None of these



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Q17. Rohit invested some amount at the rate of 6% p. a. and at the end of 3 years he got Rs. 8730 simple interest. How much compound interest he will get on same amount and same rate of interest after 2 years.

- (a) Rs. 5820
- (b) Rs. 5949.60
- (c) Rs. 5900
- (d) Rs. 5994.60

Q18. The difference between compound interest and simple interest at the same rate Rs. 5000 for 2 years is Rs. 72. The rate of interest per annum is

- (a) 6%
- (b) 8%
- (c) 10%
- (d) 12%

Q19. A man fell in love with a woman who lived 63 miles away. He decided to propose his beloved and invited her to travel to his place and offered to meet her en route and bring her home. The man is able to cover 4 miles per hour to the woman's 3 miles per hour. How far will each have travelled upon meeting?

- (a) Man = 27 miles; woman = 36 miles
- (b) Man = 36 miles; woman = 27 miles
- (c) Man = 40 miles; woman = 23 miles
- (d) Man = 45 miles; woman = 18 miles

Q20. The ratio between the present ages of P and Q is 5 : 8. After 4 years, the ratio between their ages will be 2 : 3. What is Q's age at present?

- (a) 36 years
- (b) 20 years
- (c) 24 years
- (d) None of these

Q21. An amount of money at compound interest grows up to Rs. 3,840 in 4 years and up to Rs. 3,936 in 5 years. Find the rate of interest.

- (a) 2.5%
- (b) 2%
- (c) 3.5%
- (d) 2.05%

Q22. A sum of money at compound interest amounts to thrice itself in 3 years. In how many years will it be 9 times itself ?

- (a) 9
- (b) 27
- (c) 6
- (d) 3

Q23. Sita deposited Rs. 5,000 at 10% simple interest for 2 years, How much more money will Sita have in her account at the end of two years, if it is compounded semi-annually.

- (a) Rs. 50
- (b) Rs. 40
- (c) Rs. 77.50
- (d) Rs. 85.50

Q24. The radius of a cylinder is 10 cm and height is 4 cm. The number of centimeters that may be added either to the radius or to the height to get the same increase in the volume of the cylinder is

- (a) 5
- (b) 4
- (c) 25
- (d) 16

Q25. If a solid cone of volume  $27\pi \text{ cm}^3$  is kept inside a hollow cylinder whose radius and height are that of the cone, then the volume of water needed to fill the empty space is

- (a)  $3\pi \text{ cm}^3$
- (b)  $18\pi \text{ cm}^3$
- (c)  $54\pi \text{ cm}^3$
- (d)  $81\pi \text{ cm}^3$

Q26. In a triangle ABC,  $AB + BC = 12 \text{ cm}$ ,  $BC + CA = 14 \text{ cm}$  and  $CA + AB = 18 \text{ cm}$ . Find the radius of the circle (in cm) which has the same perimeter as the triangle.

- (a)  $5/2$
- (b)  $7/2$
- (c)  $9/2$
- (d)  $11/2$

Q27. A playground is in the shape of a rectangle. A sum of Rs. 1,000 was spent to make the ground usable at the rate of 25 paise per sq. m. The breadth of the ground is 50 m. If the length of the ground is increased by 20 m, what will be the expenditure in rupees at the same rate per sq. m. ?

- (a) 1,250
- (b) 1,000
- (c) 1,500
- (d) 2,250

Q28. Two cm of rain has fallen on a square km of land. Assuming that 50% of the raindrops could have been collected and contained in a pool having a  $100 \text{ m} \times 10 \text{ m}$  base, by what level would the water level in the pool have increased ?

- (a) 1 km
- (b) 10 m
- (c) 10 cm
- (d) 1 m

Q29. A Cylindrical can whose base is horizontal and is of internal radius 3.5 cm contains sufficient water so that when a solid sphere is placed inside, water just covers the sphere. The sphere fits in the can exactly. The depth of water in the can before the sphere was put is

- (a)  $35/3$  cm
- (b)  $17/3$  cm
- (c)  $7/3$  cm
- (d)  $14/3$  cm

Q30. The lengths of three medians of a triangle are 9 cm, 12 cm and 15 cm. The area (in sq. cm) of the triangle is

- (a) 24
- (b) 72
- (c) 48
- (d) 144

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