

MODEL PAPER – 2 , PAPER – I

SECTION – I

PART A

Section-I

1. Chandana said all equalater triangles are 'similar' Do you agree with her statement justify?
2. If $\sin A = \cos B$ then show that $A+B= 90$.
3. Write two examples for equally likely events?
4. Find the median of the scores 75, 21,56,36,81,5,42?
5. Draw diagram for the following situation.
A person is flying a kite at an angle of elevation α and the length of thread from his hand to kite is 'L'.
6. Find the volume of hemisphere with radius (r) 3.5cm?
7. If $\sec \theta + \tan \theta = P$ then what is the Value of $\sec \theta - \tan \theta = ?$

SECTION -II

8. If A,B and C are interior angles of triangle ABC, then show that $\sin \left(\frac{B+C}{2} \right) = \cos \frac{A}{2}$.
9. $\triangle ABC \sim \triangle DEF$ and their areas are respectively $64cm^2$ and $121cm^2$ If $EF=15.4cm$, then find BC ?
10. A sphere a cylinder and a cone are of the same radius and same height, Find the ratio of their curved surface areas?
11. Write the formula of median for grouped data and Explain each term in it ?
12. A bag of contains 3 red balls and 5 black balls. A ball is selected at random from the bag what is the probability that the ball selected is 1] red 2] not red

13. A boat has to cross a river .It crosses the river by making an angle of 60° with the bank of the river due to the stream of the river and travels a distance of 600m to reach the another side of the river. Draw the diagram for this data?

SECTION-III

14. The distribution below gives the weights of 30 students of a class. find the median weight of the students.

Weight(In.Kg)	40-45	45-50	50-55	55-60	60-65	65-70	70-75
No.of students	2	3	8	6	6	3	2

(OR)

How many spherical balls can be made out of a solid cube of lead whose edge measures 44cm and each ball being 4cm in diameter?

15. Prove that $(\sin A + \csc A)^2 + (\cos A + \sec A)^2 = 7 + \tan^2 A + \cot^2 A$.

(OR)

Two dice one red and one yellow, are thrown at the same time write down all the possible outcomes. What is the probability that the sum of the two number appearing on the top of the dice is i) 8 ii) 13 iii) less than or equal to 12 ?

16. Construct an isosceles triangle whose base is 8cm and altitude is 4cm. Then draw another triangle whose sides are $1\frac{1}{2}$ times the corresponding sides of the isosceles triangle?

(OR)

The angle of elevation of a jet plane from a point A on the ground is 60° . After a flight of 15 second, the angle of elevation changes to 30° . If the jet plane is flying at a constant height of $1500\sqrt{3}$ meter, find the speed of the jet plane?

17. Construct a tangent to circle of radius 4cm from a point on the concentric circle of radius and measure its length ?

(OR)

The following table gives production yield per hectare of wheat of 100 farms of a village.

Production yield (qui/Hec)	50-55	55-60	60-65	65-70	70-75	75-80
No.of farmers	2	8	12	24	38	16

Draw the both O given curves above data and Find the median ?

PART-B

18. Which of the following are the sides of a right triangle? ()
 A]10cm,8cm,6cm B]13cm,1cm,9cm c]3cm,5cm,12cm, D]None
19. How many tangent Lines can be drawn to a circle from a point outside the circle ? ()
 A]1 B]4 C]2 D] None
20. $\tan\theta$ is not defined when θ is ()
 A] 90 B]60 C]30 D]0
21. The surface area of two spheres are in the ratio 1:4 then ratio of their volume is ()
 A] 1:4 B]2:8 C]1:16 D]1:64
22. Which one of the following cannot be the probability of an event ? ()
 A] $\frac{2}{3}$ B] $\frac{4}{5}$ C]0.7 D] $\frac{5}{4}$
23. Mode of 2010,2011,2012,2013,2014,2015,2016,.....2019 ()
 A]2010 B]2015 C]2019 d] no mode.
24. In ABC, DE//BC, AD=1, DB=2, AE=3 then AC=----- ()
 A]3 B]6 C]9 D]12
25. volume of hemisphere is _____CU.units ()
 A] $\frac{1}{7}\pi r^2 h$ B] $\frac{1}{3}\pi r^2 h$ C] $\frac{2}{3}\pi r^2 h$ D]None.

26. θ Express $\tan \theta$ in terms of $\sec \theta$ ()

A] $\frac{\sqrt{\sec^2 \theta - 1}}{\sec \theta}$ B] $\frac{\sec \theta}{\sqrt{\sec^2 \theta - 1}}$ C] $\frac{1}{\sqrt{\sec^2 \theta - 1}}$ D] $\sqrt{\sec^2 \theta - 1}$

27. IF $P(E)=0.05$ then Express the probability not 'E' in percentage is ()

A] 5% B] 95% C] 0.95% D] 0.05%

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