D.A.V. PUBLIC SCHOOL, NEW PANVEL

Plot No. 267, 268, Sector-10, New Panvel,
Navi Mumbai-410206 (Maharashtra).
Phone 022-27468211, 27451793, 27482276
E-mail – davnewpanvel@gmail.com, www.davnewpanvel.com

PRACTICE PAPER FOR
II PREPARATORY EXAMINATION 2015-2016
STD:- X

Sub: - Mathematics **Time: - 3 Hours**
Date:- **Marks: - 90**

……

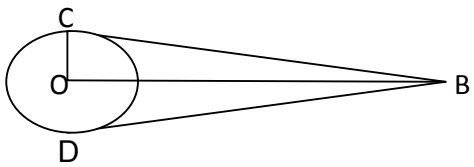
General Instructions:-

1. All questions are compulsory.
2. The question paper consists of 31 questions divided into 4 sections–A, B, C, and D.
   i) Section A comprises 4 questions of 1 mark each.
   ii) Section B comprises 6 questions of 2 marks each.
   iii) Section C comprises 10 questions of 3 marks each.
   iv) Section D comprises 11 questions of 4 marks.

……

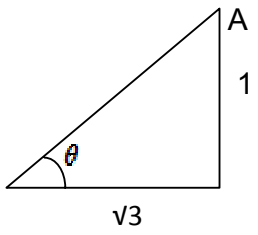
Section A

1. In the given figure if OC=9cm and OB=15cm. Then find BC+BD.



2. The ratio of the volumes of two spheres is 8:27. Find the ratio between their surface area.

3. In the given fig, the ratio of the length of a rod and its shadow is 1:√3. Find θ



4. What is the probability that the number selected from the numbers 1,2,3……15 is a multiple of 4.

Section B

5. If S_n be the sum of first n terms of an AP is given by $S_n=5n^2+3n$. Then find its n^{th} term.

6. A circle touches all the four sides of a quadrant ABCD. Prove that AB+CD=BC+DA.

7. How many times will the wheel of a car rotate in a journey of 2002m. If the radius of the wheel is 49cm.

8. Find the relation between x and y such that the points P (x,y) is equi-distant from the points A(7, 1) and B(3, 5).

9. Find the ratio in which the line segment joining the points (3, -4) and (-2, 5) is divided by $(-\frac{1}{3}, 2)$.

10. Two cubes each of 10 cm edge are joined end to end. Then find the surface area of the resulting figure.

Section C

11. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of drawing:
    (i) An ace
    (ii) 3 of spade
    (iii) 10 of a black suit

12. The sum of the areas of two squares is 640 m^2. If the difference of their perimeter is 64m. Find the sides of the two squares.

13. How many multiples of 4 lie between 10 and 250.

14. The sum of 5^{th} and 9^{th} terms of an AP is 72 and the sum of 7^{th} and 12^{th} terms is 97. Find the AP.

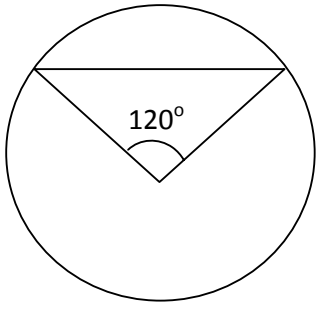
15. Prove that the lengths of tangents drawn from an external point to a circle are equal.

16. Draw a triangle PQR such that PQ=5cm, $\angle P=120^o$ and PR=6cm. Construct another triangle whose sides are $\frac{3}{4}$ times the corresponding sides of ΔPQR.

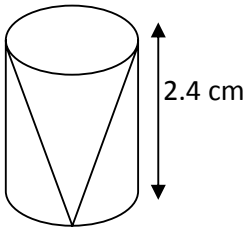
17. A person standing on the back of a river observes that the angle of elevation of the top of a tree standing on the opposite bank is 60^o. When he moves 40 m away from the bank. He finds the angle of elevation to be 30^o. Find the height of the tree and width of the river. (use $\sqrt{3}=1.732$).

18. Find the area of triangle whose vertices are (2, -4) (-1, 0) and (2, 4).

19. Find the area of the segment AYB shown in the given fig. If radius of the circle is 21cm and $\angle AOB= 120^o$.



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



Section D

21. Solve for x:
$\frac{x-1}{x+2}+\frac{x-3}{x-4}=\frac{10}{3}, \quad x \neq -2,4$

22. A sum of 280 is to be used to award four prizes among the students of Happy School. If each prize except that last is 20 less than the next most valuable one, find the value of each of the prizes. Which moral values would you suggest for these four prizes.

23. If the sum of first 4 terms of an AP is 40 and that of first 14 terms is 280, find the sum of its first n terms.

24. Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.

25. Draw a pair of tangents to a circle of radius 5cm, which are included to each other at an angle of 60^{o}.

26. The height of a house subtends right angle at the opposite window. The angle of elevation of the window from the base of the house is 60^{o}. If the width of the road is 6m, find the height of the house.

27. A die is thrown once. Find the probability of getting
    (i) A prime number
    (ii) A number lying between 2 and 6
    (iii) An odd number

28. Find the co-ordinates of the points of trisection of the line segment joining (4, -1) and (-2, -3).

29. A brooch is made up with silver wire in the form of a circle with diameter 35mm. The wire is also used in making 5 diameter which divide the circle into 10 equal sectors. Find:

    (i) The total length of the silver wire required.
    (ii) The area of each sector of the brooch.

30. 21 glass spheres each of radius 2cm are packed in a cuboidal box of internal dimensions 16cm x 8cm x 8cm and then the box is filled with water. Find the volume of water filled in the box.

31. An open metal bucket is in the shape of frustum of a cone of height 21cm with radii of its lower and upper ends as 10cm and 20cm respectively. Find the cost of milk which can completely fill the bucket at Rs. 30 per litre. (use $\pi = \frac{22}{7}$)

----------XXX----------