



# D.A.V. PUBLIC SCHOOL, NEW PANVEL

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## PRACTICE PAPER FOR

### II PREPARATORY EXAMINATION 2015-2016

STD:- IX

**Sub: - Mathematics**

**Time: - 3 Hours**

**Date: -**

**Marks: - 90**

#### General Instructions:-

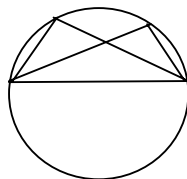
- All questions are compulsory.
- The question paper consists of 31 questions divided into 5 sections—A, B,C,D and E.
  - Section A comprises 4 questions of 1 mark each.
  - Section B comprises 5 questions of 2 marks each.
  - Section C comprises 10 questions of 3 marks each.
  - Section D comprises 9 questions of 4 marks each.
  - Section E comprises 3 questions of 10 marks. This section is based on OTBA.
- In questions on construction, the drawing should be neat and exactly as per the given measurements. Use ruler and compass only.

#### SECTION – A

- For what value of  $p$  the point  $(p, 2)$  lies on the line  $3x + y = 11$ ?
- Diagonals of quadrilateral ABCD bisect each other. If  $\angle A = 35^\circ$ , determine  $\angle B$ .
- The curved surface area of a right circular cylinder of height 14cm is  $88\text{cm}^2$ . Find the radius of the base of the cylinder.
- What is the probability of a sure event?

#### SECTION – B

- If the point  $(3,4)$  lies on the graph of  $3x = ay + 7$ , find the value of  $a$ .
- How many solution(s) of the equation  $3x + 2 = 2x - 3$  are there on the number line and Cartesian plane?
- In the figure A, B, C and D are four points on a circle.AC and BD intersect at point E such that  $\angle BEC = 130^\circ$  and  $\angle ECD = 20^\circ$ .Find  $\angle BAC$ .



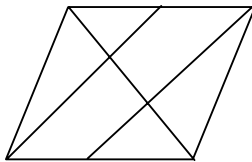
- A joker's cap is in the form of a right circular cone of base radius 7cm and height  $24\text{cm}^2$ . Find the area of the sheet required to make one cap.
- Three cubes each of side 6cm are joined end to end. Find the total surface area of the resulting figure obtained.

#### SECTION – C

- A family spends Rs 500 monthly as a fixed amount on milk and extra milk costs Rs 20 per kg. Taking quantity of extra milk as  $x$  and total expenditure on milk as  $y$ . Write a linear equation and fill the table.

$x$	0		2
$y$		1000	

11. In a parallelogram ABCD, E and F are the mid points of sides AB and CD respectively. Show that the line segment AF and EC trisect the diagonal BD.



12. In a  $\triangle ABC$ , E is the midpoint of median AD. Show that  $\text{ar}(\triangle BED) = \frac{1}{4} \text{ar}(\triangle ABC)$ .
13. If diagonals of a cyclic quadrilateral are diameters of the circle through the vertices of the quadrilateral, prove that it is a rectangle.
14. A circular park of radius 20m is situated in a colony. Three boys Ankur, Syed and David are sitting at equal distance on its boundary each having a toy telephone in his hands to talk each other. Find the length of the string of each phone.
15. Construct a triangle with the base of 5cm, the sum of other two sides are 7cm and one base angle of  $60^\circ$ .
16. The diameter of a metallic ball is 4.2cm. What is the mass of the ball, if the density of the metal is 8.9gm per  $\text{cm}^3$ ?
17. Find the cost of digging a cuboidal pit 8m long, 6m broad and 3m deep at the rate of Rs 30 per  $\text{m}^3$ .
18. The hemispherical dome of a building needs to be painted. If the circumference of the base of the dome is 17.6m, find the cost of painting it, given the cost of painting is Rs 5 per  $100\text{cm}^2$ .
19. A tyre manufacturing company kept a record of the distance covered before a tyre needed to be replaced. The table shows the result of 1000 cases.

Distance in km	Less than 4000	4000 - 9000	9000 - 14000	More than 14000
Frequency	20	210	325	445

If someone buys a tyre of this company, what is the probability that:

- It will need to be replaced before it has covered 4000km?
- It will last more than 9000km?
- It will need to be replaced after it has covered somewhere between 4000 and 14000km?

### SECTION D

20. The linear equation that converts Fahrenheit(F) in Celsius (C) given by the relation

$$C = \frac{5F - 160}{9}$$

- If the temperature is  $86^\circ\text{F}$ , what is the temperature in Celsius?
- If the temperature is  $35^\circ\text{C}$ , what is the temperature in F?
- What is the numerical value of the temperature which is same in both the scales?
- If the temperature is  $0^\circ\text{Celsius}$ , what is the temperature in Fahrenheit and if the temperature is  $0^\circ\text{Fahrenheit}$ , what is the temperature in Celsius?

21. The auto rickshaw fare in a city is charged as Rs.10 for the first km and Rs. 4 per km for subsequent distance covered. Write the linear equation to express the above statement. Draw the graph of linear equation.
22. D,E,F are respectively the midpoints of the sides BC,CA and AB of  $\triangle ABC$  .  
Show that i) BDEF is a parallelogram ii)  $ar(\triangle DEF) = \frac{1}{4} ar(\triangle ABC)$   
iii)  $ar(\text{||gmBDEF}) = \frac{1}{4} ar(\triangle ABC)$ .
23. Show that the diagonals of a square are equal and bisect each other at right angles.
24. The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.
25. A villager has a plot of land of the shape of a quadrilateral .The Gram Panchayat of the village decided to take over some portion of his plot from one of the corners to construct a health centre. Villager agrees to the above proposal with the condition that he should be given equal amount of land in lieu of his land adjoining his plot so as to form a triangular plot. Explain how the proposal will be implemented?
26. 50 circular plates, each of radius 7cm and thickness  $\frac{1}{2}$  cm are placed one above other to form a right circular cylinder. Find the total surface area and volume of cylinder so formed.
27. In a school 120 students took part in Vanmahotsva and helped each other in planting the plants to make the campus of school beautiful.

Name of plants	Rose	Marigold	Chameli	Jasmine
Number of plants	46	18	22	34

- Find the probability of planting
- Rose
  - Jasmine
  - Marigold and Chameli
  - Which value has been shown by the students?
28. Construct a  $\triangle ABC$  in which  $\angle B=60^\circ$ ,  $\angle C=45^\circ$  and  $AB+BC+CA=11\text{cm}$ .

### SECTION E

TITLE : AATITHI DEVO BHAVA

29. Find the mean of number of FTAs from different regions of the world in 2011.
30. Prepare a frequency polygon on the percentage distribution of FTAs in India according to age groups during 1996-2012.
31. i) On the basis of bar graph given on arrival of FTAs in India which travel is most preferred and why?  
ii) What is the probability of FTAs comprises of males and females during the year 2012.  
iii) Find the median of the data of FTAs from different regions of the world in 2012.