DELHI PUBLIC SCHOOL, RANCHI

Practice Test – II (2016-17)

Class:-IX **Subject- Mathematics**
Time- 3 Hrs. **M.M-90**

General instructions:

1. All questions are compulsory.
2. The question paper consists of 31 questions and is divided into 4 sections A,B,C and D.
3. Section A consists of 4 questions of one mark each, Section B consists of 6 questions of two marks each, Section C consists of 10 questions of three marks each and Section D consists of 11 questions of four marks each.

Section- A

1. AD is the median of aΔABC. Area of ΔADC = 15cm^2, then find area of ΔABC. [1]
2. Find the side of the cube whose total surface area is equal to its volume. [1]
3. Find the mode of 3,9,5,8,6,5,7 [1]
4. The possibility of happening of an event is 45%. Find the probability of the event. [1]

Section- B

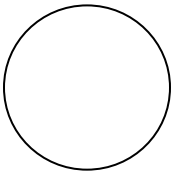
5. Find two different solutions for the equation 3x – 8y = 27. [2]
6. In a parallelogram ABCD, ∠D = 105^0, determine the angles ∠A and ∠C. [2]
7. Prove that equal chords of a circle subtends equal angles at the centre. [2]
8. The volume of a sphere is $905\frac{1}{7}$$cm^3$. Then, find its radius. [2]
9. The mean of 16 numbers is 8. If 2 is added to every number what will be the new mean? [2]
10. The king, queen and jack of clubes are removed from a deck of 52 cards and then well shuffled. One card is selected from the remaining cards . Find the probability of getting [2]
    (i) a heart. (ii) a king.

Section- C

11. When five times the larger of the two numbers is divided by the smaller number the quotient and remainder are 2 and 9 respectively. Form a linear equation in two variables for above and give its two solutions. [3]
12. In a parallelogram ABCD, E and F are the midpoints of sides AB and CD.
    Prove that the line segments AF and CE trisect the diagonal BD. [3]
13. P and Q are any two points lying on side CD and AD respectively of a parallelogram ABCD, then show that ar(ΔAPB) = ar(ΔBQC) [3]

14. In the given figure, AB ∥ CD, AD is a diameter of the circle whose centre is O.

Prove that AB = CD [3]



15. Prove that a cyclic parallelogram is always a rectangle. [3]

16. By using ruler and compass draw an angle of 120^0 and bisect it. [3]

17. The radius of a cone is 5cm and its height is 12cm, then find curved surface area and volume of the cone. [3]

18. A right triangle ABC with sides 5cm, 12cm and 13cm is revolved about the side 12cm. Find the volume of the solid so formed. [3]

19. The mean of the following distribution is 50. Then, find the value of y and respective frequencies. [3]

X	10	30	50	70	90
F	17	5y+3	32	7y-11	19

20. A die is thrown 400 times with the frequencies for the outcomes 1,2,3,4,5 and 6 as given in table. [3]

Outcome	1	2	3	4	5	6
Frequency	72	65	70	71	63	59

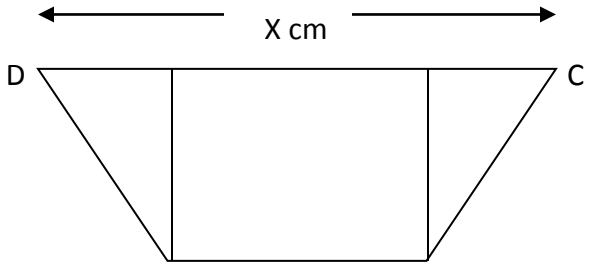
Find the probability of

(i) getting a number less than 3.
(ii) getting an outcome 6.
(iii) getting a number more than 4.

Section- D

21. Draw the graph of linear equation x + 2y = 8. From the graph check whether (-1 , -2) is a solution of this equation. [4]

22. In the given figure, ABCD is a trapezium in which AB = 7cm, AD = BC = 5cm, DC = x cm and distance between AB and DC is 4cm. Find the value of x and area of a trapezium ABCD. [4]



23. State and prove midpoint theorem. [4]

24. A point E is taken on the side BC of a parallelogram ABCD. AE and DC are produced to meet at F. Prove that ar (ΔADF) = ar (ΔBFC). [4]

25. Diagonals AC and BD of a quadrilateral ABCD intersect each other at P.

Show that ar(ΔAPB) X ar(ΔCPD) = ar(ΔAPD) X ar(ΔBPC) [4]

26. If two equal chords of a circle intersect within the circle. Prove that the line joining the point of intersection to the centre makes equal angles with the chords. [4]

27. Construct a ΔPQR, given that QR = 3cm, $\angle Q = 45^0$ and PQ + QR = 6cm [4]

28. Solid metallic sphere of radii 6cm, 8cm and 10cm respectively are melted to form a single sphere. Find the diameter of the resulting sphere and also calculate its curved surface area. [4]

29. A storage tank is in the form of a cube. When it is full of water the volume of water is $15.625m^3$. If the present depth of the water is 1.3m then find the volume of water already used from the tank. [4]

30. The distribution of weight (in kg.) of 100 people is given below:

Weight (in Kg.)	Frequency
40 – 45	13
45 – 50	25
50 – 55	28
55 – 60	15
60 – 65	12
65 – 70	5
70 – 75	2

Construct a frequency polygon for the above data. [4]

31. 1500 families with 2 children were selected randomly and the following data were recorded:

Number of girls in family	2	1	0
Number of families	475	814	211

Compute the probability having (i) Two girls (ii)One girl (iii) No girl

(iv) What value does this data represent? [4]