



Shiv Chhatrapati Shikshan Sanstha's

SANT TUKARAM NATIONAL MODEL SCHOOL, LATUR

TERM-1 EXAMINATION

Date : 24 /09/20

Time : 3.00 Hrs.

Class : IX

Subject : Mathematics

Marks: 80

### General Instructions

- All Questions are compulsory
- Question number 1 to 10 are 1 mark questions
- Question number 11 to 20 are 1 mark questions
- Question number 21 to 26 are 2 mark questions
- Question number 27 to 34 are 3 mark questions
- Question number 35 to 40 are 4 mark questions

### Section A(1 Mark each)

Solve the following multiple choice questions

1) Which of the following is the measure of a reflex angle

- a)  $120^\circ$       b)  $65^\circ$       c)  $180^\circ$       d)  $190^\circ$

2) If (2,0) is a solution of the linear equation  $2x + 3y = k$ , then the value of k is

- a) 4      b) 6      c) 5      d) 2

3) If the perimeter of a rhombus is  $20 \text{ cm}^2$  and one of the diagonal is 8cm then area of the Rhombus is

- a)  $40 \text{ cm}^2$       b)  $24 \text{ cm}^2$       c)  $20 \text{ cm}^2$       d)  $13 \text{ cm}^2$

4) If the numbers 5,7,10, x,x+2,15,17,21 are in ascending order their median is 13, then the value of x

- a) 14      b) 12      c) 16      d) 18

5) If  $x+1$  is a factor of  $ax^3+2x^2-x+3a-7$ , then value of a is

- a) 2      b) 5      c) 3      d) 7

6) Volume of a cuboid whose dimensions are 3 m X 4m X 5m

- a)  $60 \text{ m}^2$       b)  $65 \text{ m}^2$       c)  $64 \text{ m}^2$       d)  $12 \text{ m}^2$

7) How many line segments can be determined by three given non- collinear points?

- a) Two      b) Three      c) one      d) Infinte

8) The distance of the point ( -3,-2 ) from X – axis is

- a) 2 units      b) 3 units      c) 3 units      d)  $\sqrt{13}$  units

9) Volume of hollow cylinder

- a)  $\pi R^2 h$       b)  $\pi r^2 h$       c)  $\pi(R^2 - r^2)h$       d)  $\pi R^2(H - h)$

10) A rational number between 3 and 4

- a)  $\frac{3}{4}$       b)  $\frac{4}{3}$       c)  $\frac{7}{4}$       d)  $\frac{7}{2}$

11) The Total surface area of a sphere is.....

12) If the length of side of an equilateral triangle is 6 cm, then its height is .....

13) If the radius of a sphere is doubled, then the ratio of volume of the new sphere to that of the original sphere is.....

14) There are ..... Rational numbers between two rational numbers

15) An example of cubic polynomial.....

16) If  $x^7 + 3x^5 + 100$  is divided by  $x - 1$ , then find the remainder.

17) Write any two points lying in the fourth quadrant

18) Rationalization the denominator  $\frac{7}{3\sqrt{3}-2\sqrt{2}}$

19) Write any two solutions of the equation  $x - \frac{3y}{2} = 1$

20) Two cubes of side 1cm each are joined end to end. Find volume of the cuboid so formed

### Section C( 2 Marks each)

21) Find the value of  $\sqrt[4]{(625)^{-2}}$

22) The mean of five numbers is 30 .If one number is excluded, their mean becomes 28 find the excluded number

23) In which quadrant or on which axis do the points (-3,4),(-1,0),(-3,-1) and (0,3) lie

24) Find the value of K, If  $(x-3)$  is a factor of  $p(x) = 2x^3 - 5x^2 + 3x + k$

25) The present age of father is X years and son is y years. After 3 years age of father is double the age of his son. Represent the given condition in linear equation in two variables.

26) If the angles of a triangle are in the ratio 3:4:5. Find the angles.

### Section D( 3 Marks each)

27) Find the value of x if  $2^4 \times 2^5 = (2^3)^x$ .

28) Find the value of  $96 \times 104$  using identity.

29) Factorise  $27x^3+125y^3$

OR

Factorise  $(x^2-2x)^2-2(x^2-2x)-3$

30) It is given that  $\angle XYZ = 64^\circ$  and XY is produced to point P. Draw a figure from the information. If ray YQ bisects  $\angle ZYP$ , find  $\angle XYQ$  and reflex  $\angle QYP$ .

OR

The exterior angle of a triangle is equal to sum of interior opposite angles. Prove it.

31) The longer side of a rectangle hall is 24 m and the length of its diagonal is 26m. Find the area of hall.

32) 60 circular plates, each of radius 7 cm and thickness one-third of a cm, are placed one above another to form a solid circular cylinder. Find the Total surface area and volume of the cylinder so formed.

OR

The diameter of the moon is approximately one fourth of the diameter of the earth. Find the ratio of their surface areas.

33) Find the Mean, Median and Mode of all the factors of 30

34) Define a) Origin b) Abscissa c) Ordinate.

### Section D( 4 Marks each)

35) Factorize  $9x^3 - 27x^2 - 100x + 300$ , if  $3x + 10$  is one of the factor.

OR

If  $x + y + z = 10$ ,  $x^2 + y^2 + z^2 = 40$  then find  $xy + yz + zx$  and  $x^3 + y^3 + z^3 - 3xyz$

36) If  $a = \frac{1-\sqrt{7}}{1+\sqrt{7}}$  and  $b = \frac{1+\sqrt{7}}{1-\sqrt{7}}$  then find the value of  $\frac{a^2+ab+b^2}{a^2-ab+b^2}$

37) The length, breadth and height of a room are 5m, 4m and 3m respectively. Find the total cost of white washing the ceiling at the rate of Rs 12 per  $m^2$  and four walls at the rate of Rs 10 per  $m^2$ .

OR

A solid cylinder has total surface area  $462 \text{ cm}^2$ , its curved surface area is one third of its total surface area find a) its radius b) its height c) its volume

38) Draw Frequency polygon to represent the given data

Class-Interval	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70
Frequency	40	45	85	90	60	45	20

39) An umbrella is made by stitching 10 triangular pieces of cloth of two different colour, each piece measuring 20 cm, 50 cm, 50 cm. How much cloth of each colour is required for the umbrella.

OR

In a rectangular field of dimensions 50m  $\times$  30m, a triangular park is constructed. If the dimensions of the park is 14m, 15m and 13m, find the area of remaining.

40) Prove that the sum of interior angles of a triangle is  $180^\circ$

OR

In  $\triangle ABC$ , AD and CE are the bisectors of  $\angle A$  and  $\angle C$  respectively. If  $\angle ABC = 90^\circ$ , find  $\angle ADC + \angle AEC$

BEST OF LUCK.  
REGARDS:-STNMS