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MID TERM EXAMINATION OCTOBER 2020

Grade – IX

Subject – MATHEMATICS

Marks – 40

(USE MATHEMATICS HW NOTEBOOK TO ANSWER)

General Instructions:

- 1) All the questions are compulsory.
- 2) This questions paper contains 16 questions divided into four sections A, B, C and D
 - Section A comprises 4 questions of 1 mark each.
 - Section B comprises 4 questions of 2 marks each.
 - Section C comprises 4 questions of 3 marks each.
 - Section D comprises 4 questions of 4 marks each.

Section - A

I) Fill in the blanks:

1x4=4

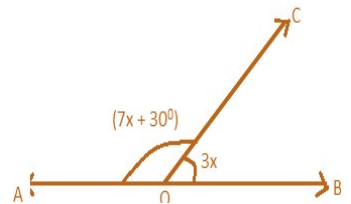
- 1) A _____ line can be produced indefinitely.
- 2) The co-efficient of x^2 in $2 - x^2 + x^3$ is _____.
- 3) Probability of sure event is _____.
- 4) A part of line with one end point is called _____.

Section - B

II) Solve the following:

2x4=8

- 5) Simplify $2^{2/3}$, $2^{1/5}$
- 6) Find the remainder when $x^3 + 3x^2 + 3x + 1$ is divided by $x+1$.
- 7) Evaluate $(99)^3$ using suitable identity.
- 8) In the given figure, if AOB is a straight line, find the value of 'x'



Section - C

III) Solve as directed:

3X4=12

- 9) Find the area of a triangle two sides of which are 18 cm and 10 cm and the perimeter is 42 cm.
- 10) 1500 families with 2 children were selected randomly, and the following data were recorded:

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

Compute the probability of a family chosen at random, having

- a) 2 girls
- b) 1 girl
- c) No girl

P.T.O

- 11) Visualize 3.765 on the number line, using successive magnification.
- 12) In which quadrant or which axis do each of the points $(-2, 4)$, $(3, -1)$, $(-1, 0)$, $(1, 2)$, $(-3, -5)$ and $(0, 5)$ lie?

Section - D

IV) Do as directed:

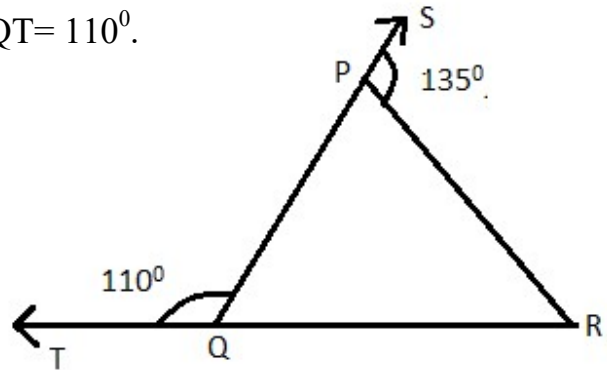
4X4=16

- 13) Verify that $x^3 + y^3 + z^3 - 3xyz = \frac{1}{2}(x + y + z)[(x - y)^2 + (y - z)^2 + (z - x)^2]$
- 14) A triangle and a parallelogram have the same base and the same area. If the sides of the triangle are 26cm, 28cm and 30cm and parallelogram stands on the base 28cm, find the height of the parallelogram.
- 15) i) If a point C lies between two points A and B such that $AC = BC$ then prove that $AC = \frac{1}{2} AB$. Explain by drawing figure.

ii) In figure if $AC = BD$, then prove that $AB = CD$



- 16) In the given figure $\angle SPR = 135^\circ$ and $\angle PQT = 110^\circ$. Find $\angle PRQ$.



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