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Date : 9-07-2021

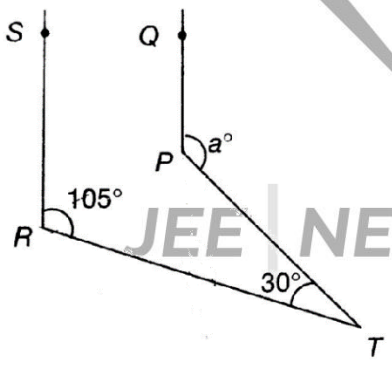
Batch: 9th Genesis

Sub: Mathematics

Test code: SECT01 (21021308)

Time: 2 Hours **M. Marks: 30**

1. Divide: $\sqrt[6]{144}$ by $\sqrt[6]{4}$. (1 marks)
2. Which is smaller, $\sqrt{2}-1$ or $\sqrt{3}-\sqrt{2}$? (1 marks)
3. The square root of $a^{m^2}.b^{n^2}$ is_____. (1 marks)
4. Factorize m^7+m^4. (1 marks)
5. The system of equations a + b = 3 and 3a + 3b = 9 is _____. (Consistent/inconsistent) (1 marks)
6. Can a triangle be formed by line segments of lengths a, b and c, such that a = b – c? (1 marks)
7. The exterior angle of a regular polygon is 60°. The number of sides of the polygon is____. (1 marks)
8. In the following figure, PQ||RS. If <TRS = 105°, <PTR = 35°, <QPT = a°, find the value of a. (2 marks)



9. If $x=\frac{2-\sqrt{3}}{2+\sqrt{3}}$ find the value of $x+\frac{1}{x}$. (2 marks)
10. The equations $\frac{x}{a}+\frac{y}{b}=1$ and $\frac{x}{b}+\frac{y}{a}=1$ are incorrect if_____. (2 marks)
11. A triangle ABC is right angled at A. AL is drawn perpendicular to BC. Prove that <BAL = <ACB. (3 marks)
12. Express y in terms of x in the equation 2x – 3y = 12. Find the points where the line represented by this equation cuts x – axis and y – axis. (3 marks)

13. Factorize: $(a^2-b^2)^3+(b^2-c^2)^3+(c^2-a^2)^3$ (3 marks)

14. Find the circum – centre of the triangle whose vertices are A(-3, - 1), B (1, 2) and C(0, - 4). (4 marks)

15. Find the point on X – axis, which is equidistant from A(6, 3) and B(- 1, 4). (4 marks)