SATISH CHANDRA MEMORIAL SCHOOL

MATHEMATICS

IX

Time: 1 hour (Surds, indices and straight lines) MM : 30

Section A (Each question 1 mark)

1. Evaluate : $0.00032^{3/5}$
2. If $5^a = 3125$, then the value of $5^{(a-3)}$ is .....
3. If $2^x = 3^y = 6^{-z}$, then $\frac{1}{x} + \frac{1}{y} + \frac{1}{z}$ is equal to

   a) 0 b) 1 c) 3/2 d) -1/2

4. Find the slope of the line, joining the points (-3,4) and (5, -2) .
5. Write the equation of the line, passes through the point (2,1) and having slope ½.
6. If $2^x = \sqrt[3]{32}, then\ x =?$

Section B (Each question 2 marks)

7. Solve for x: $4^{x-1} = 3.2^x - 8$
8. If $x^{1/a} = y^{1/b} = z^{\frac{1}{c}}$ and $xyz = 1\ then\ prove\ that\ a + b + c = 0$
9. Find the point of intersection of the lines $2x - 3y + 4 = 0\ and\ x - 4y + 7 = 0.$
10. Find the intercepts of the line on the axes: $3x + 4y = 24.$
11. If $x = 3 + 2\sqrt{2}, then\ \left(\sqrt{x} - \frac{1}{\sqrt{x}}\right) =?$
12. If $2^{n+4} - 2^{n+2} = 3, then\ n =?$

Section C (Each question 4 marks)

13. Prove that $ab + bc + ca = 0$, if $p^a = q^b = r^c$ and pqr =1
14. Find the equation of the line passing through the point (3,4) and making intercepts on the axes which are equal but opposite in sign.
15. If $x = 5 + 2\sqrt{6}, then\ \frac{x-1}{\sqrt{x}} = ?$