



SRI KRISHNA COACHING CENTRE RMM

STD : XI

UNIT TEST ONE

MARKS: 50

TIME : 2 HRS

BASIC ALGEBRA

EXAM NO :

I. Answer the following

5×2=10

- Find a positive number smaller than $\frac{1}{2^{1000}}$. Justify
- Solve $\frac{1}{5}|10x - 2| < 1$
- If a and b are the roots of the equation $x^2 - px + q = 0$, Find the value of $\frac{1}{a} + \frac{1}{b}$.
- $\sqrt{2}$ is not a rational number
- Find the radius of the spherical tank whose volume is $\frac{32\pi}{3}$ Units.

II. Answer the following

5×3=15

- If $x = \sqrt{2} + \sqrt{3}$ Find $\frac{x^2+1}{x^2-2}$.
- Find the values of x for which $\frac{x^3 - (x-1)}{x-2}$.
- If $x^2 + x + 1$ is a factor of the polynomial $3x^3 + 8x^2 + 8x + a$, then find the value of a.
- Solve $-x^2 + 3x - 2 \geq 0$
- Find the number of solution of $x^2 + |x - 1| = 1$.

III. Answer the following

5×5=25

- Resolve the partial fraction $\frac{6x^2 - x + 1}{x^3 + x^2 + x + 1}$
- Simplify $\frac{1}{3 - \sqrt{8}} - \frac{1}{\sqrt{8} - \sqrt{7}} + \frac{1}{\sqrt{7} - \sqrt{6}} - \frac{1}{\sqrt{6} - \sqrt{5}} + \frac{1}{\sqrt{5} - 2}$
- Find all the values of x that satisfies the inequality $\frac{2x-3}{(x-2)(x-4)} < 0$.
- A and B are working on similar jobs but their monthly salary differ by more than Rs.6,000. If B earns Rs.27,000 per month, then What are the possibilities of A's salary per month?
- Prove that $\log 2 + 16\log\frac{16}{15} + 12\log\frac{25}{24} + 7\log\frac{81}{80} = 1$.

ALL THE BEST