PRACTICE QUESTIONS (ASSIGNMENT - 2)

CHAP - 1

NUMBER SYSTEMS

1) Express $0.6\overline{72}$ in the form of p/q. $\left(\frac{74}{110}\right)$

2) Express $0.\overline{8} + 0.5\overline{6}$ in the form of p/q $\left(\frac{29}{90}\right)$

3) Simplify :

   a) $2\sqrt[3]{18} \times \sqrt[3]{12}$ (12)

   b) $3\sqrt{3} + 2\sqrt{27} + \frac{7}{\sqrt{3}}$ $\left(\frac{34\sqrt{3}}{3}\right)$

   c) $(4\sqrt{3} - 2\sqrt{5})^2$ $(68 - 16\sqrt{5})$

   d) $4\sqrt{12} - 5\sqrt{18} + 3\sqrt{32} + 2\sqrt{75}$ $(18\sqrt{3} - 3\sqrt{2})$

   e) $21\sqrt{384} \div 7\sqrt{96}$ (6)

   f) $3\sqrt{45} - \sqrt{125} + \sqrt{200} - \sqrt{50}$ $(4\sqrt{5} + 5\sqrt{2})$

4) Write two irrational numbers between 2 and 3.

5) Write two irrational numbers between $\frac{4}{9}$ and $\frac{7}{11}$.

6) Write two rational numbers between $\sqrt{2}$ and $\sqrt{3}$.

7) Represent a) $\sqrt{5}$ b) $\sqrt{5.6}$ on the number line.

Ans

8) Rationalise :

a) $\frac{1}{7+3\sqrt{2}}$ $\qquad$ $\frac{7-3\sqrt{2}}{31}$

b) $\frac{5-3\sqrt{14}}{7+2\sqrt{14}}$ $\qquad$ $\frac{-119+31\sqrt{14}}{7}$

c) $\frac{\sqrt{6}}{\sqrt{2}+\sqrt{3}} + \frac{3\sqrt{2}}{\sqrt{6}+\sqrt{3}} - \frac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}}$ $\qquad$ 0

9) Find a & b if

i) $\frac{3-\sqrt{5}}{3+2\sqrt{5}} = a\sqrt{5} - b$ $\qquad$ $a = \frac{9}{11}$, $b = \frac{19}{11}$

ii) $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a - b\sqrt{3}$ $\qquad$ $a = 11$, $b = 6$

10) If $a = 8+3\sqrt{7}$ & $b = \frac{1}{a}$, then find

1) a^2+b^2 $\qquad$ 2) a^2-b^2 $\qquad$ 3) a^3+b^3

i) 254
ii) $96\sqrt{7}$
iii) 4048

EXPONENTS

1. Simplify : $(256)^{-\left(4^{-\frac{3}{2}}\right)}$ $\frac{1}{2}$

2. $\frac{4}{(2187)^{-3/7}} - \frac{5}{(256)^{-1/4}} + \frac{2}{(1331)^{-2/3}}$ 330

3. $\frac{7^{2n+3} - (49)^{n+2}}{\left((343)^{n+1}\right)^{2/3}}$ -42

4. Solve for x :

a) $\left(\sqrt[3]{4}\right)^{2x+\frac{1}{2}} = \frac{1}{32}$

b) $\sqrt{\left(8^0 + \frac{2}{3}\right)} = (0 \cdot 6)^{2-3x}$

$x = -4$

$x = \frac{5}{6}$

5) Prove : $\left(\frac{x^a}{x^b}\right)^{1/ab} \left(\frac{x^b}{x^c}\right)^{1/bc} \left(\frac{x^c}{x^a}\right)^{1/ca} = 1$