# SELF ASSESSMENT TEST -3

## CLASS B.A/B.SC-1

TRANSFORMATION OF EQUATIONS

1. Remove the fractional coeff.so that the leading coeff remains unity of eqn $x^3-\frac{7}{3}x^2+\frac{11}{36}x-\frac{25}{72}=0$
2. Solve $3x^3-22x^2+48x-32=0$ , its roots being in H.P.
3. Increase the roots of the eqn $2x^3+x^2-13x+6=0$ by 3 and hence solve the eqn.
4. Show that the same transformation removes second and fourth terms of the eqn. $x^4+20x^3+143x^2+430x+462=0$ . obtain the transfomed eqn and solve
5. Find the eqn whose roots are the squares of the roots of the eqn $x^3-5x^2+17x-13=0$ Hence find the nature of the roots of given eqn

6.If $\alpha,\beta,\gamma$ are the roots of $x^3+x+2=0$ , then form an eqn whose roots are $\beta\gamma+\frac{1}{\alpha},\alpha\beta+\frac{1}{\gamma},\alpha\gamma+\frac{1}{\beta}$ .

7. If $\alpha,\beta,\gamma$ are the roots of the roots of the eqn $x^3+2x^2+x-1=0$ , form an eqn whose roots are $\frac{1}{\beta^3}+\frac{1}{\gamma^3}-\frac{1}{\alpha^3},\frac{1}{\alpha^3}+\frac{1}{\beta^3}-\frac{1}{\gamma^3},\frac{1}{\gamma^3}+\frac{1}{\alpha^3}-\frac{1}{\beta^3}$ .

8.Find the eqn of the squared differences of the roots of the cubic $x^3+6x^2+7x+2=0$ .

9.Form an equation whose roots are the roots of the eqn. $2x^5-7x^4+8x^3+x^2-2x+4=0$ With theirsign changed.

10.Solve $6x^3-11x^2+6x-1=0$ , given that its roots are in H.P.

11.solve $15x^4-8x^3-14x^2+8x-1=0$ ,given that it roots are in H.P.

12.Transform the eqn $x^4-4x^3-18x^2+5x+8=0$ into one in which the third term missing

13.Find the condition that second and third term of the cubic

$a_0x^3+3a_1x^2+3a_2x+a_3=0$ are removed by single transformation. Hence solve $x^3-12x^2+48x-72=0$

14.Find the eqn whose roots are cubes of the roots of eqn $x^4-2x^3-x^2+2x+1=0$

15.If $\alpha,\beta,\gamma$ are the roots of the eqn $x^3+2x+1=0$ , then form eqn whose roots are $\frac{\beta}{\alpha}+\frac{\alpha}{\beta},\frac{\beta}{\gamma}+\frac{\gamma}{\beta},\frac{\gamma}{\alpha}+\frac{\alpha}{\gamma}$ .

16.If $\alpha,\beta,\gamma$ are the roots of the eqn $x^3+px^2+qx+r=0$ , then form eqn whose roots are $\beta\gamma-\alpha^2,\gamma\alpha-\beta^2,\alpha\beta-\gamma^2$ .

17.Find an eqn whose roots are the squares of the difference of the roots of $x^3-3x+1=0$ .

18.Find the eqn whose roots are the squares of the difference of the roots of $x^3+6x^2+2=0$

19.Find the eqn of the squared diff. of the roots of the cubic $x^3+6x^2+7x+2=0$ .

20.If $\alpha,\beta,\gamma$ are the roots of $2x^3+x^2+x+1=0$ , form an eqn whose roots are $\frac{1}{\alpha^2}+\frac{1}{\beta^2}-\frac{1}{\gamma^2},\frac{1}{\beta^2}+\frac{1}{\gamma^2}-\frac{1}{\sigma^2},\frac{1}{\gamma^2}+\frac{1}{\alpha^2}-\frac{1}{\beta^2}$ .

21.If $\alpha,\beta,\gamma$ are the roots of $x^3+x+2=0$ then form an eqn whose roots are $\beta^2+\beta\gamma+\gamma^2,\alpha^2+\alpha\beta+\beta^2,\gamma^2+\gamma\alpha+\alpha^2$ .

22.Find the eqn whose roots are the cubes of the roots of the eqn $x^4-x^3+2x^2+3x+1=0$

23.Find the eqn whose roots are the squares of the roots of the eqn $x^3-x^2-2x+2=0$ .

24.Show that the same transformation removes both second and fourth terms of the eqn $x^4+16x^3+83x^2+152x+84=0$ .

25.Transform the eqn $2x^3-15x^2+24x-7=0$ in which the third term is missing

26.Use the multiplier to remove the fractional coeff. of the eqn $x^3-\frac{3}{2}x^2-\frac{1}{16}x+\frac{1}{9}=0$ .