

## Section D

## Questions numbers 21 to 31 carry 4 marks each:

Q. 21 Simplify: 
$$\frac{\sqrt[2]{6}}{\sqrt{2}+\sqrt{3}} + \frac{\sqrt[6]{2}}{\sqrt{6}+\sqrt{3}} - \frac{\sqrt[8]{3}}{\sqrt{6}+\sqrt{2}}$$

Q. 22 The volume of cuboid is polynomial. P(x) =  $4x^3 + 20x^2 + 33x + 18$  find possible expression for dimension of the cuboid.

Q.23 Factorise :  $x^{12} - 1$ 

Q.24 Prove that angles opposite to equal sides of a triangle are equal



Q.28 T is a point on side QR of  $\triangle$  PQR and S is a exterior point such that RT=ST. Prove that PQ+PR>QS

Q.29 <1=<3, <2=<4, <3=4 Write the relation between <1 and <2 Using a Euclid's axiom



*Q.30 Locate*  $\sqrt{3}$  on a number line.

Q.31 If x+y+z =10 and  $x^2 + y^2 + z^2 = 40$  Find xy+yz+zx.