Section A

Question numbers 1 to 4 carry 1 mark each:

Q.1 If $125^x \frac{25}{5^x} =$ find x.

Q.2 Find the value of $P\left(\frac{2}{3}\right)$ for $p(y) = 2y^3 - y^2 - 13y - 6$.

Q.3 Do the points lie in the same quadrant? (6,-6) and (-6, 6).

Q.4 Find complementary angle of 35^0

Section B

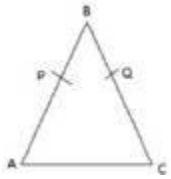
Question numbers 5 to 10 carry 2 marks each:

Q.5 Without actually calculating the cubes, Find the value of $45^3 - 25^3 - 20^3$.

Q.6 If the area of an equilateral triangle is $\sqrt[16]{3}cm^2$ The Find perimeter.

Q.7 Angles of a triangle are in the ration 3:4:5. Find largest angle of the triangle.

Q.8 AB=BC and BP-BQ Show that AP=CQ



Q.9 Plot the points (2,-2), (-4,4) and join them does the line pass through origin.

Q.10 Find a rational and irrational no. between $\sqrt{2}$ and $\sqrt{3}$.

Section C

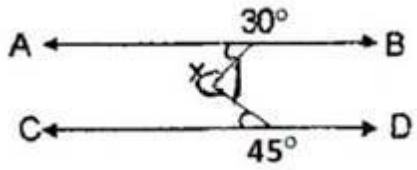
Question numbers 11 to 20 carry 3 marks each:

Q.11 Express $0.12\bar{3}$ in the form of $\frac{p}{q}$

Q.12 Find the area of triangular park whose sides are of length 120m, 80m and 50m.

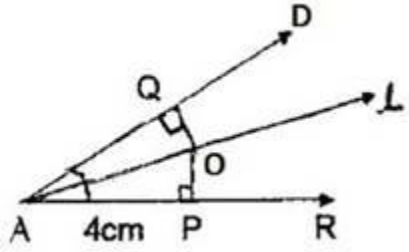
Q.13 If (3x–2) is a factor of $3x^3+x^2-20x+12$. Find other factors.

Q.14 If AB||CD. Determine x.



Q.15 If two lines intersect each other then prove that vertically opposite angles are equal.

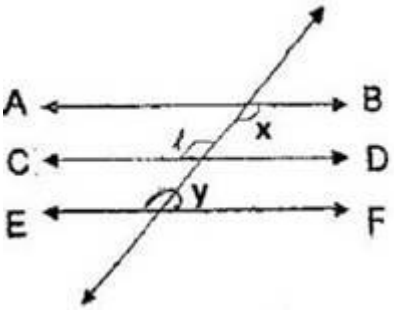
Q.16 If a line 1 is the bisector of $\angle A$, then find OQ.



Q.17 Mr. Saxena has a rectangular plot of land ABCD which he decided to donate to his society for the organization of fitness campaign like yoga, mediation etc. the co ordinates of three vertices of plot are A(-2,-5), B(6,-5) and (6,-1). Plot these points find co-ordinates of fourth vertex.
Which value does Mr. Saxena possess?

Q.18 find product using suitable identity $\left(x-\frac{1}{2}\right)\left(x+\frac{1}{2}\right)\left(x^2+\frac{1}{x^2}\right)\left(x^4+\frac{1}{x^4}\right)$

Q.19 If AB||CD, CD||EF and x:y=3:2 find Z.



Q.20 ABC is an isosceles Δhas points D and E on BC such that BE=CD Show that AD=AE.

Section D

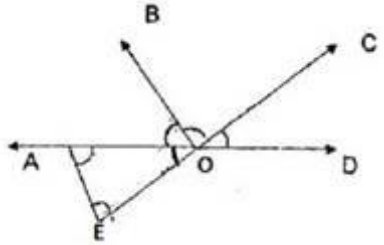
Questions numbers 21 to 31 carry 4 marks each:

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

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



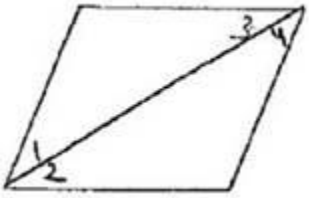
Q.25 Find (a=b)

Q.26 AC=AE, AB=AD and $\angle BAD=\angle EAC$ Show that BC=DE

Q.27 If x^3+ax^2+bx+6 has (x – 2) has factor and leaves remainder 3 when divided by (x – 3). Find the values of a and b.

Q.28 T is a point on side QR of ΔPQR 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.