COMBINED TEST- 9TH

1. ABC is an isosceles triangle in which AB=AC. AD bisects exterior angle PAC and CD‖AB. Show that –
   a) <DAC = <BCA
   b) ABCD is a ‖^{gm}.

2. ABCD is a trapezium in which AB ‖ CD and AD=BC. Show that
   a) <A= <B
   b) diagonal AC= diagonal BD.

3. The line segment joining the midpoints of two sides of a triangle is parallel to the third side.

4. Two parallel lines l and m are intersected by a transversal P. Show that the quadrilateral formed by the bisectors of interior angles is a rectangle.

5. In a parallelogram ABCD, E and F are the midpoint of side AB and CP respectively. Show that the line segments AF and EC trisect the diagonal BD.

6. ABCD is a quadrilateral and BE ‖ AC and also meets DC produced at E; show that area of triangle ADE = Ar. Quadrilateral ABCD.

7. ABC and ABD are two triangles on the same base AB. If line segment CD is bisected by AB at O, show that Ar(triangle ABC) = Ar(triangle ABD).

8. Parallelogram ABCD and rectangle ABEF are on the same base AB and have equal areas.. Show that perimeter of ABCD is greater than ABEF.

9. ABCD is a ‖^{gm} and BC is produced to a point Q, such that AD= CQ. If AQ intersect DC at P. Show that area of BPC= area DPQ.

10. Express in the form of ax + by + c = 0.
    a) $x = \frac{y}{5} - 10 = 0$
    b) $-2x + 3y = 6$
    c) $x = 3y$
    d) $y - 2 = 0$

11. Given the point (1,2), find the equation of a line on which it lies. How many such equations are there?

12. A taxi in the city charges Rs. 8 for first kilometre and for subsequent distance, it is Rs. 5 per km. Distance is x, fare is y. Find an equation and draw its graph.