Questions of 1 mark each

Q.1. If diagonals of a quadrilateral are equal and bisect each other at right angles, then it is a

A	parallelogram	B	square	C	rhombus	D	trapezium

Q.2. A quadrilateral has three acute angles each measuring 70°. The measure of fourth angle is

A	140°	B	150°	C	105°	D	120°

Q.3. The angles of a quadrilateral are x°, (x – 10)°, (x + 30)° and (2x)°, the smallest angle is equal to

A	68°	B	52°	C	58°	D	47°

Q.4. In the given figure, ABCD is a rhombus. If ∠A = 70°, then ∠CDB is equal to

A	65°	B	55°	C	75°	D	80°

Q.5. The diagonals AC and BD of a parallelogram ABCD intersect each other at the point O.

If ∠DAC = 32° and ∠AOB = 72°, then ∠DBC is

A	32°	B	24°	C	40°	D	63°

Q.6. In a square ABCD, the diagonals AC and BD bisect at O. Then Δ AOB is

A	right angled	B	acute angled	C	obtuse angled	D	equilateral

Q.7.	In the given figure, ABCD is a rectangle whose diagonals AC and BD intersect at O. If ∠OAB = 28°, then ∠OBC is equal to								
	A	72°	B	50°	C	75°	D	62°		
Q.8.	Two adjacent angles of a parallelogram are in the ratio 2: 3. The angles are								
	A	90°, 180°	B	36°, 144°	C	72°, 108°	D	52°, 104°		
Q.9.	In a square ABCD, AB = (2x + 3) cm and BC = (3x – 5) cm. Then the value of x is								
	A	8	B	5	C	7	D	10		
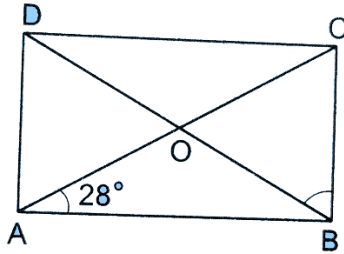
Q.10.	**DIRECTION:**
	In the given question, a Statement of Assertion (A) is followed by a Statement of Reason (R). Choose the correct option.
	*Statement A (Assertion)***:** A parallelogram consists of two congruent triangles.
	*Statement R(Reason)***:** Diagonal of a parallelogram divides it into two congruent triangles.
	(a)Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
	(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
	(c) Assertion (A) is true but reason (R) is false.
	(d) Assertion (A) is false but reason (R) is true.

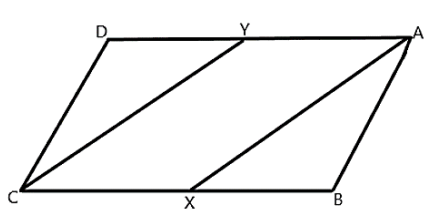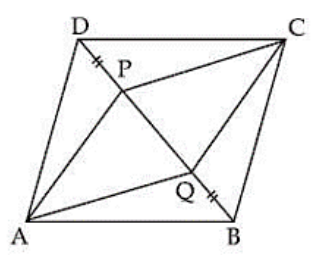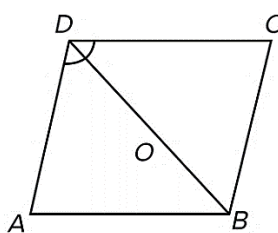|	**Questions of 2 marks each**
Q.11.	The opposite angles of a parallelogram are $(3x – 2)°$ and $(63 – 2x)°$. Find the measure of all the angles of the parallelogram.
Q.12.	In ΔABC, ∠ B = 90°, D and E are the midpoints of the sides AB and AC respectively. If AB = 6 cm and AC = 10 cm, then find the length of DE.

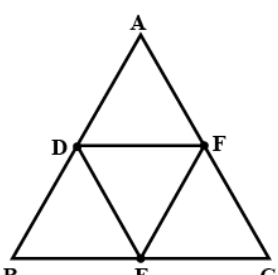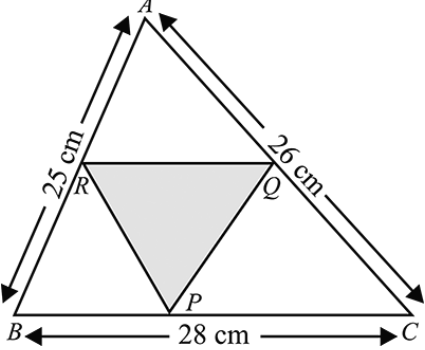| Q.13.	Diagonals AC and BD of a parallelogram ABCD intersect each other at O. If OA = 3 cm and OD = 2 cm, determine the lengths of AC and BD.
Questions of 3 marks each	
Q.14.	In figure, AX and CY are respectively the bisectors of the opposite angles A and C of a parallelogram ABCD. Show that AX ‖ CY.
Q.15.	ABCD is a parallelogram. On diagonal BD are points P and Q such that DP = BQ. Show that APCQ is a parallelogram.
Q.16.	A diagonal of a parallelogram bisects one of its angles. Prove that it will bisect its opposite angle also.
Questions of 5 marks each	
Q.17.	In Δ ABC, D, E and F are respectively the mid-points of sides AB, BC and CA respectively (see fig). Show that Δ ABC is divided into four congruent triangles by joining D, E and F.

Q.18.	E is the mid-point of the side AD of the trapezium ABCD with AB ∥ DC. A line through E drawn parallel to AB intersect BC at F. Show that F is the mid-point of BC.
Q.19.	E is the mid-point of a median AD of ΔABC and BE is produced to meet AC at F. Show that $AF = \dfrac{1}{3} AC$

Case study-based (4 marks)

Q.20.	During Diwali celebration in a school, girls are asked to prepare Rangoli in triangular shape. Dimensions of ΔABC are 26 cm, 28 cm and 25 cm. Garland is to be placed along the side of ΔPQR which is formed by joining mid-points of sides of ΔABC.

    (i)   Name the figure BPQR.

    (ii)   In fig. R and Q are mid-points of AB and AC respectively. Find the length of RQ.

    (iii)   Find the length of the garland which is to be placed along the side of ΔPQR.

ANSWERS

Q.1	B	Q.2	B	Q.3	C	Q.4	B
Q.5	C	Q.6	A	Q.7	D	Q.8	C
Q.9	A	Q.10	a	Q.11	37°, 143°, 37°, 143°	Q.12	4 cm
Q.13	17 cm	Q.20	(i) Parallelogram (ii) 14 cm (iii) 39.5 cm					