

SECTION - A - $3 \times 3 = 9.$

- ① Prove that, if diagonals of a quadrilateral bisect each other, then it is a parallelogram.
- ② Find the radius of a sphere whose surface area is 154 cm^2 .
- ③ If the non-parallel sides of a trapezium are equal, prove that it is cyclic.

SECTION - B. $4 \times 4 = 16.$

- ④ Show that the line segment joining the mid-point of the opposite sides of a quadrilateral bisect each other.
- ⑤ P and Q are two points lying on the sides DC and AD respectively of a parallelogram ABCD. Show that, $\text{ar}(\triangle APB) = \text{ar}(\triangle BQC)$.
- ⑥ ABCD is a cyclic quadrilateral whose diagonals intersect at a point E. If $\angle DBC = 70^\circ$, $\angle BAC = 30^\circ$, find $\angle BCD$.
- ⑦ Curved Surface area of a cone is 308 cm^2 and its slant height is 14 cm . Find: ① radius of the base and ② total surface area of the cone.