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Date : 2-2-2024	**SUT – 2024**	**Time : 1 hour**	A
Std : IX	**Sub : MATHS - II**	**Marks: 20**	

Q.1) Solve any four subquestions of the following: **(4)**

1) □PQRS is a parallelogram. If PQ = 3.5 cm then find length of SR. Write reason also.
2) Define – Incircle.
3) Draw two concentric circles of any radii.
4) Identify the types of quadrilaterals whose all pairs of adjacent sides are congruent.
5) Find the length of radius of a circle having length of longest chord is 15.8cm.

Q.2) Solve any three subquestions of the following: **(6)**

1) Adjacent sides of a rectangle are 7cm and 24cm. Find the length of its diagonal.
2) 'Congruent chords of a circle are equidistant from the centre of the circle' for this theorem draw figure, write 'Given' and 'To prove'.
3) State with reasons whether the following statements are true or false:
   a) Every square is a rhombus.
   b) Every rectangle is a parallelogram.
4) In □ABCD, side BC || side AD, side BC ≅ side AD. If $\angle A = 72^0$ then find measures of $\angle B$ and $\angle D$.

Q.3) Solve any two subquestions of the following: **(6)**

1) Given: In △ABC, point P is the midpoint of seg AB and point Q is the midpoint of seg AC.

To prove : seg PQ || seg BC and PQ = $\frac{1}{2}$ BC

Construction: Produce seg PQ up to R such that PQ = QR. Draw seg RC. Draw Figure and write proof.

2) Construct $\triangle DEF$ such that DE = EF = 6cm; $\angle F = 45^0$ and construct its circumcircle Measure its radius and write it.

3) Radius of a circle is 10cm. There are two chords of length 16cm each. What will be the distance of these chords from the centre of the circle?

Q.4) Solve any one subquestion of the following: (4)

1) Prove that the quadrilateral formed by joining the midpoints of sides of a quadrilateral in order is a parallelogram.

2) Construct $\triangle XYZ$ such that, XY = 6.7 cm, YZ = 5.8cm, XZ = 6.9cm. Construct its incircle as well as circumcircle. Measure the radii of both the circle and find their ratio of radius of cirumcircle to the radius of incircle.

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