

## 11. Areas Related to circle

8 Marks:

- 1) A chord of a circle of radius 10cm subtends a right angle at the centre. Find the area of the corresponding i) minor ii) major segments
- 2) In a circle of radius 21cm, an arc subtends an angle of  $60^\circ$  at the centre. Find i) the length of the arc ii) area of sector formed by the arc iii) area of the segment formed by the corresponding chord.
- 3) A chord of a circle of radius 15cm subtends an angle of  $60^\circ$  at the centre. Find the areas of the corresponding minor and major segments of the circle.
- 4) A chord of a circle of radius 12cm subtends an angle of  $120^\circ$  at the centre. Find the area of the corresponding segment of the circle.
- 5) A horse is tied to a peg at one corner of a square shaped grass field of side 15m by means of a 5m long rope. Find
  - i) the area of that part of the field in which the horse can graze
  - ii) the increase in the grazing area if the rope were 10m long instead of 5m.
- 6) A brooch is made with silver wire in the form of a circle with diameter 35mm. The wire is also used in making 5 diameters which divide the circle into 10 equal sectors. Find i) the total length of the silver wire required ii) the area of each sector of the brooch.
- 7) An umbrella has 8 ribs which are equally spaced. Assuming umbrella to be a flat circle of radius 45cm, find the area between the two consecutive ribs of the umbrella.
- 8) A car has two wipers which do not overlap. Each wiper has a blade of length 25cm sweeping through an angle of  $115^\circ$ . Find the total area cleaned at each sweep of the blades.
- 9) Find the area of the sector of a circle with radius 4cm and of angle  $30^\circ$ . Also, find the area of the corresponding major sector.