MENSURATION

1. Three solid metal spheres of radii 3 cm, 4 cm, 5 cm respectively, are melted together. The metal is recast as a single solid sphere. Find the percentage reduction in the area of surface resulting from this.

2. AB, DC are the parallel sides of a trapezium ABCD, and the diagonals AC, BD cut at E. The areas of the triangles AED, DEC are 6 cm^2, 4 cm^2 respectively. Find the area of
   (a) ΔBEC
   (b) ΔAEB

3. A right circular cone is divided into 3 portions A, B and C by planes parallel to the base as shown in the figure. The ratio of each portion is 1 : 2 : 3. Find
   (a) the ratio of the volume of A to the volume of B,
   (b) the ratio of the volume of B to that of C, and
   (c) the ratio of the area of the curved surface of B to that of C.