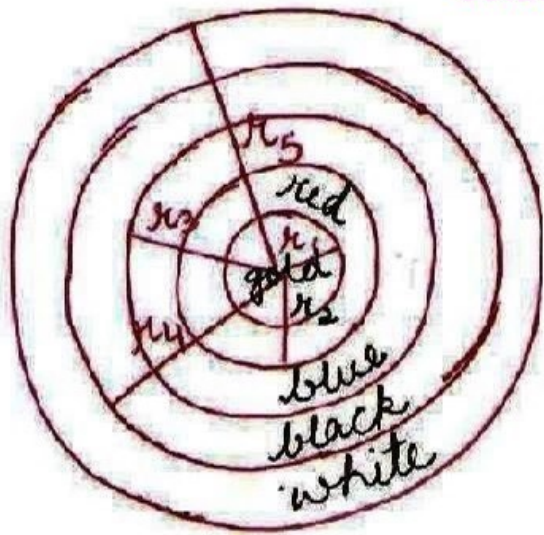


Solutions by Dev Anoop (Bathinda)

ex 12.1



$$\begin{aligned} \text{area of gold col. region} &= \pi r_1^2 \\ &= \frac{22}{7} \times \frac{21}{2} \times \frac{21}{2} \\ &= \frac{693}{2} \\ &= 346.5 \text{ cm}^2 \end{aligned}$$

$$\text{area of red col. region} = \pi(r_2^2 - r_1^2)$$

$$= \frac{22}{7} [21^2 - 10.5^2]$$

$$= \frac{22}{7} (21 - 10.5)(21 + 10.5)$$

$$= \frac{22}{7} \times 10.5 \times 31.5$$

$$= 1039.5 \text{ cm}^2$$

$$\text{area of blue region} = \pi(r_3^2 - r_2^2)$$

$$= \frac{22}{7} [31.5^2 - 21^2]$$

$$= \frac{22}{7} (31.5 - 21)(31.5 + 21)$$

$$= \frac{22}{7} \times 10.5 \times 52.5$$

$$= 1732.50 \text{ cm}^2$$

$$\text{area of black region} = \pi(r_4^2 - r_3^2)$$

$$= \frac{22}{7} (42^2 - 31.5^2)$$

$$= \frac{22}{7} (42 - 31.5)(42 + 31.5)$$

$$= \frac{22}{7} \times 10.5 \times 73.5$$

$$= 2425.5 \text{ cm}^2$$

$$\text{area of white region} = \pi(r_5^2 - r_4^2)$$

$$= \frac{22}{7} (52.5^2 - 42^2)$$

$$= \frac{22}{7} \times 10.5 \times 94.5$$

$$= 3118.5 \text{ cm}^2$$