Section-03

Q.1

Ans:- Given = Power = 250KW, P = 6, V = 400 V, Z = 720, $\theta_m = 2.5^\circ$

Find: ATa/pole & ATc/pole.

1. Output Current

$$I_a = \frac{250000}{400} = 625A$$

(2) $$I = \frac{625}{6} = 104.17\ A$$

(3) De-magnetizing ampere turns/pole, $\frac{AT_d}{Pole}$

$$= \frac{\theta_m}{360} ZI = \frac{2.5}{360} \times 720 \times 104.17$$

$$= 520.85\ AT$$

(4) Gross-magnetizing ampere turns per pole,

$$\frac{AT_c}{Pole}$$

$$= ZI\left(\frac{1}{2P} - \frac{\theta_m}{360}\right)$$

$$= 720 \times 104.17\left(\frac{1}{2\times 6} - \frac{2.5}{360}\right)$$

$$= 5729.35\ AT$$

Ans