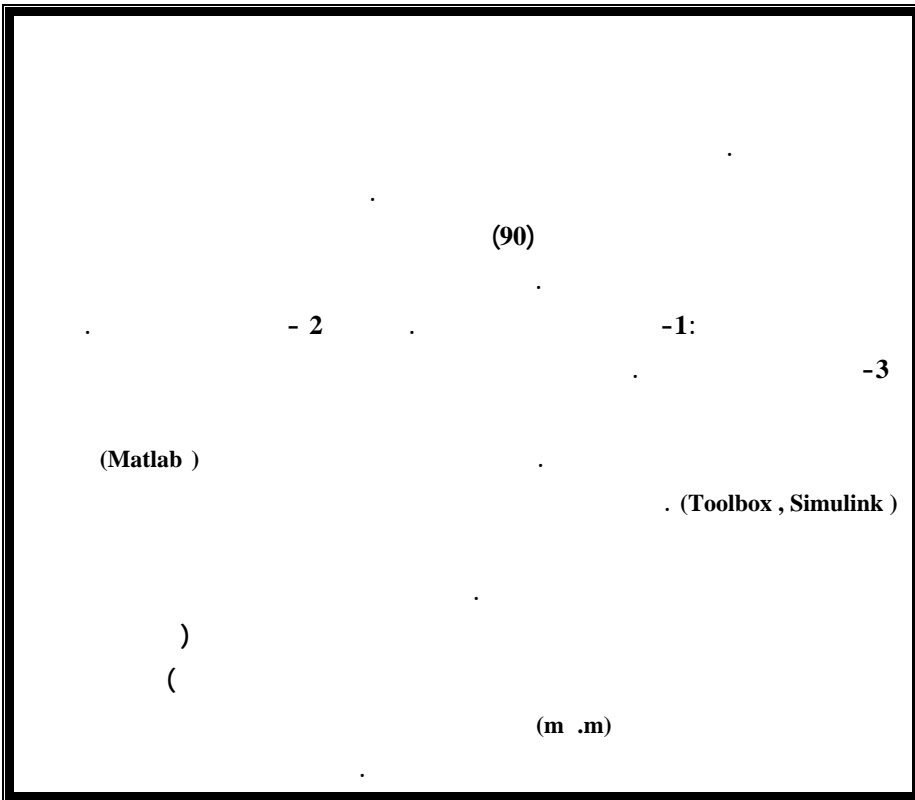

(Toolbox, Matlab Simulink)



(90)

(m.m)

:

-1

(5 HP)

(0.5 HP)

(mmf)

(direct axis)

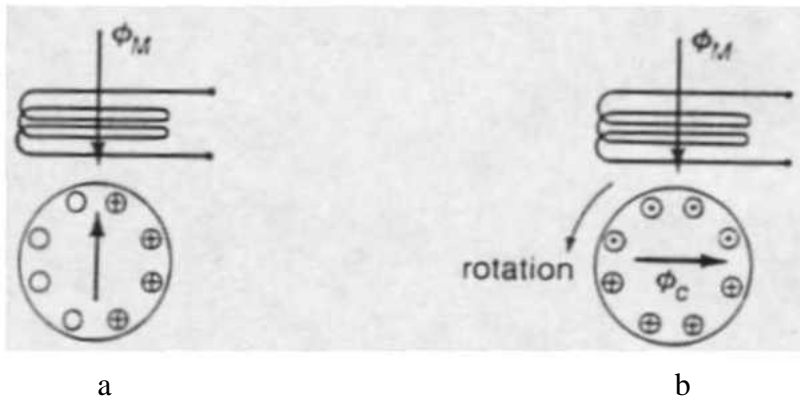
(quadrature axis)

(1 - a) (

(Transformer Voltage)

(speed voltage)

(1-b)



a

b

-(b)

-(a)

(1) :

(pulsating flux)

(Two counter

rotating fluxes)

$$(1) i = I \cos \omega t$$

h

$$(2) B = B_m \cos \omega t :$$

(pulsates)

B_m

(θ)

$$(3) B(\theta) = (B_m \cos \omega t) \cos \theta$$

: (trigonometric)

$$(4) B(\theta) = \frac{B_m}{2} \cos(\theta - \omega t) + \frac{B_m}{2} \cos(\theta + \omega t)$$

$(B_m \cos \omega t)$

(3)

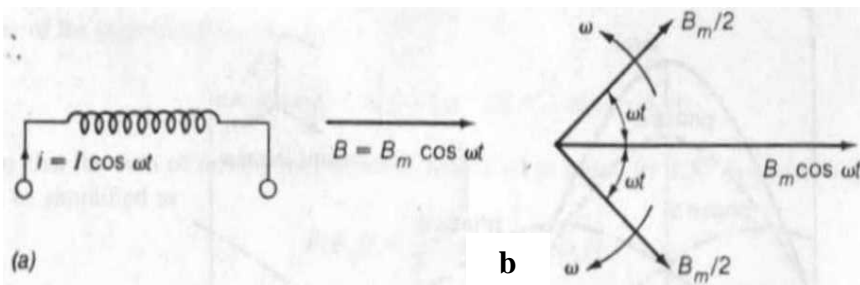
. (2-b)

$(B_m/2)$

(4)

$$(5) \frac{d\theta}{dt} = \omega :$$

(Pulsating)



(a) : (2)

(b)

:

1-1

(Phase splitting)

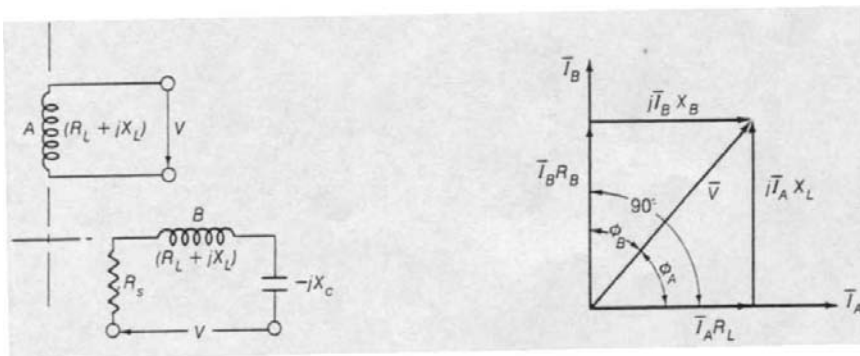
(90)

$$Z_L = R_L + jX_L$$

R_s

(3)

$$\begin{matrix} X_c & R_L \ll X_L \\ X_L & R_L \end{matrix}$$



(b)

a

(a)

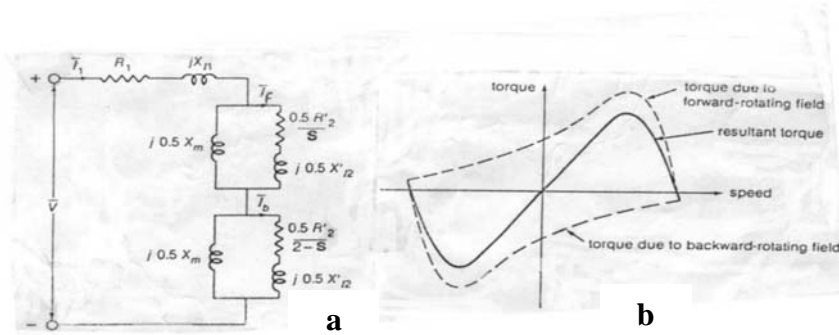
b (3)

(Forward rotating field)

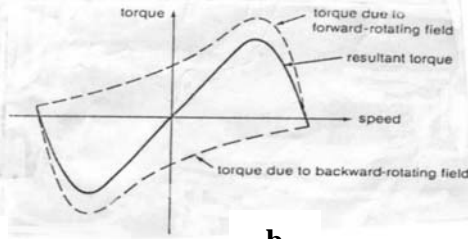
(Backward rotating field)

(4) (2-s) (s)

(4-b)



a



b

- (a) : (4)

- (b)

$$(6) T_e = \frac{I_f^2(1-s)R'_2}{\omega_m \cdot s} - \frac{I_b^2(1-s)R'_2}{\omega_m \cdot (2-s)}$$

: R'_2, X'_{L2} :

() : R_1, X_{L1}

: ω_m

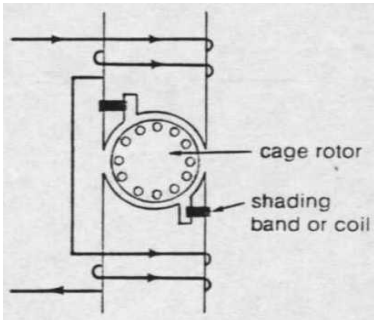
: I_f

: I_b

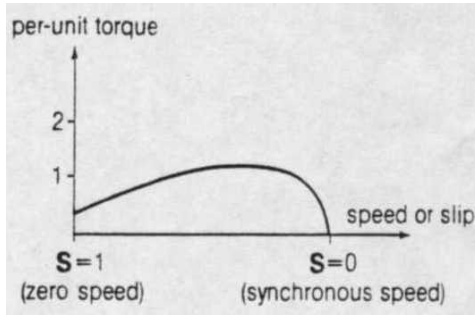
: T_e

(5)

(5)



a



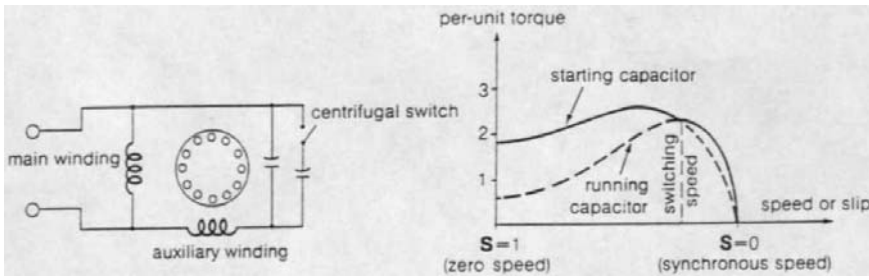
b

— (b) — (a). (5)

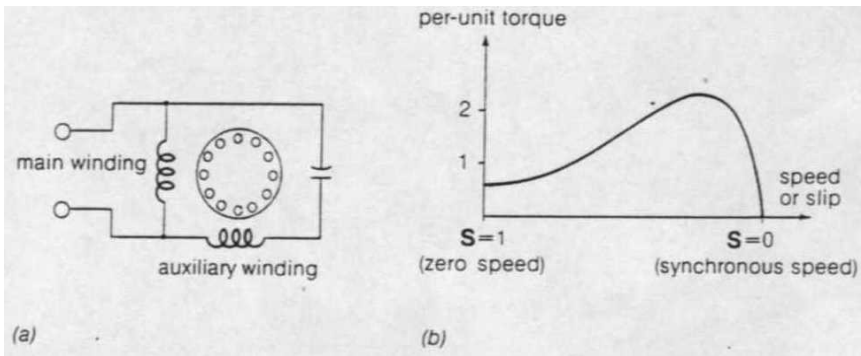
:

-3-1

	Starting Capacitor	-1
	Two value capacitor	-2
	(6-b)	(6-a)
(7-a)	(permanent-split capacitor)	-3
	(7-b)	



- **a** - (b) - (a) **b** : (6)



- (a) - (b) - (a) : (7)

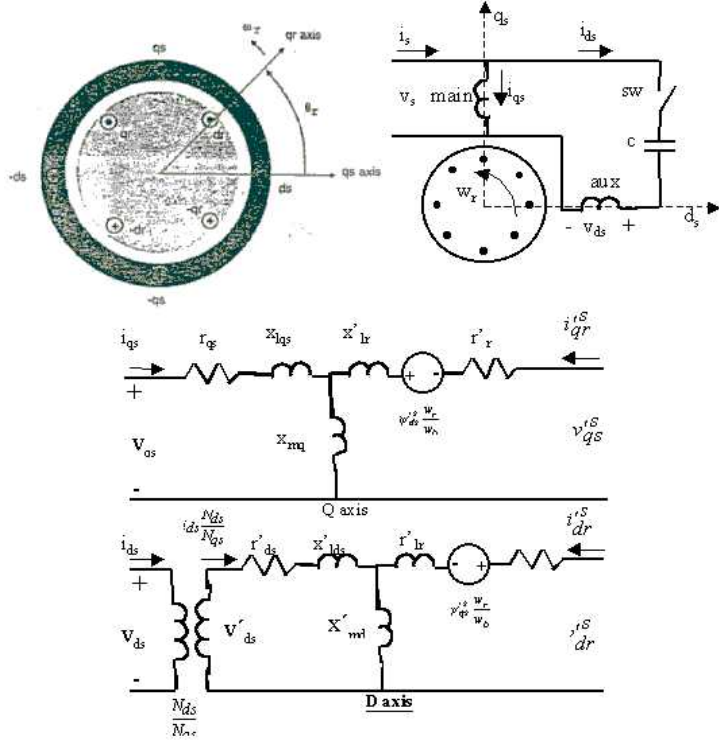
-2

(q,d)

() (8)
)

$$v_{qs} = i_{qs} r_{qs} + \frac{d\lambda_{qs}}{dt} \quad , \quad v_{qr} = i_{qr} r_{qr} + \frac{d\lambda_{qr}}{dt}$$

$$v_{ds} = i_{ds} r_{ds} + \frac{d\lambda_{ds}}{dt} \quad , \quad v_{dr} = i_{dr} r_{dr} + \frac{d\lambda_{dr}}{dt} \quad (7)$$



(8)