3. Investment in Assets = ₹ 5,00,000

No. of shares = $\underline{50,000}$

$r = \boxed{15\%}$ $k_e = 10\%$

$b = 50\%$ $EPS = ?$ $\dfrac{PAT}{No.\ of\ shares} = \dfrac{5,00,000 \times 15\%}{50,000} = 1.5$

Retention Ratio

$P = \dfrac{EPS(1-b)}{k_e - (b \times r)}$

$= \dfrac{1.5\,(1-0.5)}{0.10 - (0.5 \times 0.15)}$

$= \dfrac{0.75}{0.10 - 0.075} = \dfrac{0.75}{0.025}$

$P \boxed{= 30}$

$1 - b = 80\%$
$b = 20\%$

$P = \dfrac{1.5\,(0.8)}{0.10 - (0.2 \times 0.15)}$

$= \dfrac{1.2}{0.07}$ $\boxed{= 17.14}$

$1 - b = 40\%$
$b = 60\%$

$P = \dfrac{1.5\,(0.4)}{0.10 - (0.6 \times 0.15)}$

$= \dfrac{0.6}{0.01}$ $\boxed{= 60}$

* Dividend Models

$$\frac{PAT}{No.\,of.\,sh.} = \frac{Profit\ After\ Taxes}{No.\ of\ Shares}$$

$$EPS = Earnings\ Per\ Share$$

i) Walter's Model

→ Acc. to Walter's model dividend is a relevant and active variable that affects price of the co.'s shares. and value of firm

Dividend Pay-out Ratio   Retention Ratio

→ The optimum dividend decision is taken based on the relationship b/w Return on Investment (r) and Cost of Equity (IRR) → (ke)

i) Growth Firms $(r > ke)$ → Retain 100% Earnings, Dividend 0%.

ii) Declining Firms $(r < ke)$ → Distribute 100% Earnings, Retention 0%

iii) Normal Firms $(r = ke)$ → Indifferent.

Walter's Model $\quad P = Div. + \dfrac{\dfrac{r}{Ke}(EPS - Div.)}{ke}$

Que.1 A Ltd.
$r = \boxed{5\%}$ $\quad$ $Ke = 10\%$
$EPS = 8$

Dividend Pay-out Ratio

(i) D/P Ratio $= 25\%$
$Div. = EPS \times 25\%$
$= 8 \times 25\% \boxed{= 2}$

$\therefore P = \dfrac{2 + \dfrac{0.15}{0.10}(8-2)}{0.10}$

$\boxed{P = ₹110}$

(ii) D/P Ratio $= 50\%$ $\quad$ $Div. = 8 \times 50\%$
$= 4$

$\therefore P = \dfrac{4 + \dfrac{0.15}{0.10}(8-4)}{0.10}$

$\boxed{= 100}$

B Ltd.
$r = 10\%$ $\quad$ $Ke = 15\%$ $\quad$ $EPS = 8$

Dividend Pay-out Ratio $= \underline{25\%, 50\% \ \& \ 75\%}$

→ D/P Ratio $= 75\%$
$Div. = 8 \times 75\%$
$\boxed{= 6}$

$= 6 + \dfrac{\dfrac{0.15}{0.10}(8-6)}{0.10}$

$= \dfrac{9}{0.10} \boxed{= 90}$

C Ltd.
$r = 15\%$ $\quad$ $Ke = 15$ $\quad$ EPS-8

→ Optimum policy for A Ltd. (Growth Firm) is to retain all the profit and should not distribute Dividend because if the co. pays more dividend, its share price decreases.

* Gordon's Model.

$$P = \frac{EPS\ (1-b)}{k_e - (b \times r)}$$

b = Retention Ratio

1 - b = Div. Pay-out Ratio

* A Ltd. (Based on Info. of Previous Question).

$k_e = 12\%$ $r = 15\%$ $EPS = 8$ Div. Pay-Out Ratio = 25%, 50%, 75%

(i) 1 - b = 25%.
   b = 75%.

$$\therefore P = \frac{8\ (0.25)}{0.12 - (0.75 \times 0.15)}$$

$$= \frac{2}{0.12 - 0.1125}$$

$$= \boxed{266.67}$$

ii) 1 - b = 50%.
   b = 50%.

$$P = \frac{8\ (0.5)}{0.12 - (0.5 \times 0.15)}$$

$$= \frac{4}{0.12 - 0.075} = \boxed{88.89}$$

(iii) 1 - b = 0.75
   b = 0.25

$$P = \frac{8\ (0.75)}{0.12 - (0.25 \times 0.15)}$$

$$= \frac{6}{0.12 - 0.0375}$$

$$= \boxed{72.727}$$