Cost of capital

1) a) $kd = \dfrac{I + (F - P)/n}{0.60P + 0.40F}$

$= \dfrac{12 + (100 - 106)/7}{(0.60 \times 106) + (0.40 \times 100)}$

$= \dfrac{12 + (-617)}{63.6 + 40}$

$= \dfrac{11.15}{103.60} = 10.76\%$

b) $= 10.76 \times (1 - 0.30)$

$= 10.76 \times 0.70$

$= 7.53\%$

2) a) $kd = \dfrac{10 + (100 - 91)/6}{(0.60 \times 91) + (0.40 \times 100)}$

$= \dfrac{10 + (916)}{54.6 + 40} = \dfrac{11.50}{94.6}$

$= 12.156\%$

b) $= 12.156 \times (1 - 0.40)$

$= 12.156 \times 0.60$

$= 7.29\%$.

3) $K_P = \dfrac{14 + (100 - 91)/6}{(0.60 \times 91) + (0.40 \times 100)}$

$= \dfrac{14 + (9/6)}{54.6 + 40.}$

$= \dfrac{15.50}{94.60} = 16.38\%$.

4) $K_P = \dfrac{12 + (100 - 120.)/10}{(0.60 \times 120) + (0.40 \times 100)}$

$= \dfrac{12 + (-20/10)}{72 + 40}$

$= \dfrac{12 - 2}{112} = \dfrac{10}{112} = 8.929\%$.

5)

$Ke = Rf + B(Rm - Rf)$

$= 8 + 0.85 \times (7)$

$= 8 + (0.85 \times 7)$

$= 13.95\%$

$Kd = 12 \times (1 - 0.35)$

$= 12 \times (0.65) = 7.8\%$

$WACC = \left(13.95 \times 0.50\right) + (7.8 \times 0.50)$

$= 6.975 + 3.9$

$= 10.88\%$

6)

$Ke = 8 + 1.2 \times (9)$

$= 8 + 10.8$

$= 18.8\%$

$Kd = 14 \times (1 - 0.30)$

$= 9.8$

$WACC$

$= \left(9.8 \times \frac{2}{5}\right) + \left(18.8 \times \frac{3}{5}\right)$

$= 3.92 + 11.28$

$= 15.2\%$

7)

a) $K_d = 9 \times (1 - 0.30)$

$= 9 \times 0.70$

$= 6.3$

$K_e = 12\%$

$WACC = \left(12 \times \frac{2}{3}\right) + \left(6.3 \times \frac{1}{3}\right)$

$= 8 + 2.1$

$= 10.1$

b) $WACC = \left(12 \times \frac{3}{5}\right) + \left(6.3 \times \frac{2}{5}\right)$

$= 7.2 + 2.52$

$= 9.72\%$.

8) a) $K_e = 17\%$.

$K_d = 10 \times (1 - 0.30)$

$= 7\%$.

$WACC = (17 \times \frac{3}{4}) + (7 \times \frac{1}{4}) = 12.75 + 1.75$

$= 14.5\%$.

b) $WACC = (17 \times \frac{2}{3}) + (7 \times \frac{1}{3})$

$= 11.33 + 2.33 \quad = 13.66\%$.

9)

$$k_e = \left(\frac{D1}{P0}\right) + g$$

$$= \left(\frac{₹2}{₹20}\right) + 0.08$$

$$= (0.10) + (0.08) = 18\%$$

$$k_p = \frac{11 + (100 - 85)/10}{(0.60 \times 85) + (0.40 \times 100)}$$

$$= \frac{11 + (15/10)}{51 + 40} = \frac{11 + 1.5}{91} = 13.73\%$$

$$k_d = \frac{14 + (100 - 90)/6}{(0.60 \times 90) + (0.40 \times 100)}$$

$$= \frac{14 + (10/6)}{54 + 40.} = \frac{15.67}{94}$$

$$= 16.67\%$$

Post-tax $k_d = 16.67 \times (1 - 0.5)$

$= 8.33\%$.

$K_{BL} = 16 \times (1 - 0.50)$

$= 8\%$

WACC as per Book value

Capital	Amount	weightage	Cost	WACC
Equity	150	0.4478	18%	8.06%
Retained earnings	70	0.2089	18%	3.76%
preference capital	5	0.0149	13.73%	0.20%
Debenture	40	0.1194	8.33%	0.99%
Bank loan	70	0.2089	8%	1.67%
Total	335	1		14.69%

WACC as per market value

Capital	Amount	weightage	cost	coACC
equity	300	0.7312	18%	13.16%
Preference shares	4.25	0.0103	13.73%	0.14%
Debenture	36	0.0877	8.33%	0.73%
BANK loan	70	0.1706	8%	01.37%
Total	410.25	1	—	15.40%