

## HW - Chapter 4 - Cost of Capital - Q11

(A)

(i) Cost of new debt i.e.  $K_d = \text{Int} (1 - t) \div \text{NP} = 16 (1 - 0.5) \div 96 = 0.0833$

(ii) Cost of new preference shares i.e.  $K_p = \text{PD} \div \text{NP} = 1.1 \div 9.2 = 0.12$

(iii)  $D_1 = 50\% \text{ of } 2021 \text{ EPS} = 50\% \text{ of } 2.36 = \text{Rs. } 1.18$

Calculation of  $g$  when there is a uniform trend (on the basis of EPS)

$= \text{EPS} (2013) - \text{EPS} (2012) \div \text{EPS} (2012) = (\text{Rs. } 1.10 - \text{Rs. } 1.00) \div 1 = 0.10 \text{ or } 10\%$

Cost of  $K_r = (D_1 \div P_0) + g = 1.18 \div 23.60 + 0.10 = 0.05 + 0.10 = 0.15$

(B) Calculation of marginal cost of capital

Type of Capital	Weights	% Cost	Total
Debenture	15	8.33	1.25
Preference Share	5	12.00	0.60
Equity Share	80	15.00	12.00
Marginal cost of capital			13.85

(C) The company can spend the following amount without increasing marginal cost of capital and without selling the new shares:

Retained earnings =  $50\% \text{ of } \text{EPS of } 2021 \times \text{outstanding equity shares}$

$= 0.50 \times \text{Rs. } 2.36 \times 10,000 \text{ shares} = \text{Rs. } 11,800$

Capital investment before issuing equity shares =  $11800 \div 0.8 = \text{Rs. } 14,750$

(D) If the company spends in excess of Rs. 14,750, it will have to issue new equity shares at Rs. 20 per share.

The cost of new issue of equity shares will be =  $(D_1 \div \text{NP}) + g = (\text{Rs. } 1.18 \div 20) + 0.10 = 0.159$

The marginal cost of capital will be:

Type of Capital	Weights	% Cost	Total
Debentures	15	8.33	1.25
Preference Shares	5	12.00	0.60
Equity Shares (New)	80	15.90	12.72
			14.57