

## MCQ Set 1

### Answer:

(i) (B) Capital Appreciation = Closing NAV – Opening NAV = '20.25 – '20 = '0.25  
Total return = Capital Appreciation + Income + Capital Gain = 0.25 + 0.06 + 0.04 = '0.35  
Monthly Return = Total Return/Opening NAV = 0.35 / 20 = 0.0175 = 1.75%

(ii) (A)  $P_0 = D_1 / (K_e - g)$  or  $P_0 = 2.20 / (0.20 - 0.10) = '22$  ; **Working Note :**  $D_1 = D_0 (1+g) = 2 (1+0.10) = '2.20$

(iii) (C) Theoretical forward price of security of X Ltd = '160 ×  $e^{0.09} \times 0.0833 = '160 \times e^{0.0075} = '160 \times 1.007528 = '161.20$

(iv) (A) The rate for \$/£ is to be calculated. **The formula is –**

$\$/\text{£} = \text{Re} / \text{£bid} : \text{Re} / \text{£ask} = 94.30 : 95.20 = 1.4190 : 1.4370$

<u>Re / \$</u>	<u>Re / \$</u>
66.45	66.25
bid	ask
Or, 1.42	: 1.44

(v) (B) In call options when strike price is below the price of underlying futures, call option is 'in the money'. In put options, when the strike price is above the price of underlying futures put option 'is in the money'.

(vi) (D) Debt Beta is 0, since it is not given.

Asset beta =  $[\text{Equity Beta} \times \text{Equity}] / [\text{Equity} + \text{Debt} \times (1 - \text{tax})] + [\text{Debt Beta} \times \text{Debt} (1 - \text{tax})] / [\text{Equity} + \text{Debt} \times (1 - \text{tax})] = \{(1.40 \times 0.75) / [0.75 + 0.25 \times (1 - 0.35)]\} + 0 = 1.1507$ .

Company's Beta =  $[\text{Equity Beta} \times \text{Equity}] / [\text{Equity} + \text{Debt} \times (1 - \text{tax})] + \{[\text{Debt Beta} \times \text{Debt} (1 - \text{tax})] / [\text{Equity} + \text{Debt} \times (1 - \text{tax})]\}$  or 1.1507 =  $\text{Equity Beta} \times 0.67 / [0.67 + 0.33 (1 - 0.35)] + 0$  ; or Equity Beta = 1.52.

(vii) (A)  $KE = [\text{Earnings per share} / \text{Market price per share}] \times 100 = ['20 / '175] \times 100 = 11.43\%$ .

(viii) (C) Sharpe's ratio =  $(RP - RF) / \text{Standard Deviation} = [13 - 10] / 16 = 0.19$

(ix) (B) Forward price of securities =  $'160 \times e^{(0.09)(0.50)} = '160 \times e^{0.045} = '160 \times 1.046028 = '167.3645$ .

(x) (B)  $B_p$  is to be ascertained as  $-- [ \text{Equity Beta} + E / (D + E) ] + [ \text{Debt Beta} + E / (D + E) ] = (1.30 \times 0.70) + (0 \times 0.3) = 0.91$

Computation of return from the project =  $RF + \text{Beta}(\text{RM} - \text{RF}) = 0.10 + 0.91 \times (0.18 - 0.10) = 0.1728 = 17.28\%$ .

## MCQ Set 2

### Answer:

(i) (B) Market value of Debentures = Interest on Debenture / Current Yield Rate =  $12 / 0.15 = '80$

(ii) (C) Degree of Combined leverage =  $\text{Change in EPS} / \text{EPS} / \text{Change In Sales} / \text{Sales} = [(38.40 - 9.60) / 9.60] / (28,000 - 20,000) / 20,000 = 3 / 40 = 7.5$

(iii) (A) Average sales per day =  $'3.65 \text{ lakhs} / 365 \text{ days}$  ; Increase in Total Returns =  $'1 \text{ lakhs} @ 3 \text{ days} \times 15\% = '45,000$ .

(iv) (A) TT selling rate =  $21.50 (1 - 0.00125) = '21.47 / DM$

(v) (A) Rate of return on equity fund =  $24\% \times 0.80 = 19.2$   
Cost of debt is =  $12\% \times 0.20 = 2.4$   
Overall rate of return Co. should earn =  $21.6$

(vi) (D) % spread on Euro/Pound rate =  $\frac{1.6557 - 1.6543}{1.6543} \times 100 = 0.0850\%$

(vii) (A) P.V. of inflows =  $6.00 \times 5.019 = '30.114$  lakhs  
Profitability Index =  $P.V. of inflows / P.V. of outflows = 30.114 / 20 = 1.51$

(viii) (B) P. V. of lease rentals =  $'18 \text{ lakhs} \times PVI \text{ FA } (12\%, 8) ; = '18 \text{ lakhs} \times 4.9676 ; = '89,41,680$

(ix) (A) Margin =  $(\text{Option premium} \times 100) + \{100 \times 0.20 (\text{market value of the share})\} - \{100 \times (\text{Exercise price} - \text{market price})\} ; = (2.50 \times 100) + \{100 \times (0.20 \times 37)\} - 100 \times (41 - 37) = '590$

(x) (C) Assuming in call option, the total outgo =  $\text{Premium} + \text{Exercise Price} = '200 + ('20 \times 100) = '2,200.$   
After 3 months, if the share price is  $'2,500$ , the net profit =  $'2,500 - '2,200 = '300.$

### MCQ Set 3

#### Answers:

(i) (B) Levered beta =  $0.8 \times [1 + (1 - 0.35) \times (60 / 40)] = 1.58 ; \text{Cost of Equity} = 7.5 + 1.58 \times 8 = 20.14$

(ii) (B)  $[( '41.8550 - '40.9542) / '40.9542] \times 12 / 6 \times 100 ; = 0.04399 \times 100 = 43.99$  i. e 4.40% per annum

(iii) (A) Capital Appreciation =  $\text{Closing NAV} - \text{Opening NAV} = 84 - 72 = '12.$   
Return =  $[\text{Cash Dividend} + \text{Capital Appreciation} + \text{Capital gain}] / \text{Opening NAV} ;$   
 $= [6 + 4 + 12] / 72 = 22 / 72 = 0.3056 = 30.56\%$

(iv) (A) Given,  $R_f$  (risk free return) =  $6\% ; R_m$  (market return) =  $16\% ; S.D.$  of market return =  $20\% ;$   
 $S.D.$  of Greaves stock =  $24\% ;$  correlation coefficient of Greaves with the market =  $-0.5$   
Beta of Greaves stock =  $0.5 \times 0.24 \times 0.20 / (0.20)^2 = 0.6$   
The required return =  $R_f + \text{Beta of Greaves stock } (R_m - R_f) ; = 6\% + 0.6 (16-6)\% = 12\%$

(v) (A) 3 month interbank rate(ask) with margin =  $'(48.060 + 0.5350) ; = '48.5950 ;$  With exchange profit @  $0.125\%$ , the quote will be  $'48.5950 \times 1.00125 = '48.66$  Profit =  $'(48.66 - 48.60) \times 2m \text{ USD} = '120000.$

(vi) (A)  $S (\$ / \text{£}) = F (\$ / \text{£}) \times (1 + r\$)^2 / (1 + r\text{£})^2 ; = 1.61 \times (1 + 0.03)^2 / (1 + 0.04)^2 ; = 1.5792$

(vii) (B) a. Fixed Income Funds =  $'(32,00,000 + 25,00,000 + 13,00,000)$

b. Equity Funds =  $'(30,00,000 + 15,00,000 + 5,00,000)$  Leverage =  $a / (a + b) = '70,00,000 / '120,00,000 = 58.33\%$

(viii) (C) 10% increase in Market return resulted in 16% increase in Arihant Ltd. Stock. Thus the Beta for Arihant Ltd. Stock is  $1.60$  (i. e  $16\% / 10\%$ ) ; Now Systematic Risk is =  $(1.60)^2 (257.81) = 659.99\% = 660\%$

(ix) (C) Expected rate of Return (CAPM) ;  $R_e = R_f + \text{Beta } (R_m - R_f) ; = 12\% + 1.6(15\% - 12\%) = 12\% + 4.8\% = 16.85\%$   
Price of stock (Dividend Growth Formula)  
 $R_e = D_1 / (P_0 + g) ; 0.168 = 2.50 / (P_0 + 0.08) ; \text{Or, } 0.168 - 0.08 = 2.50 / P_0 ; \text{Or, } P_0 = 2.50 / 0.088 = '28.41$

(x) (A) Current Ratio = Current Asset / Current Liabilities =  $300000 - X / 200000 - X = 2$  ; Or,  $(300000 - X) = 2(200000 - X)$ ; Or,  $X = 100000$

### MCQ Set 4

#### Answers:

(i) (C)  $K_e = 27 / 150 \times 100 = 18\%$  ;  $K_e = \text{DPS} / 160 = 18\%$  ;  $\text{DPS} = 160 \times 18\% = '28.80$

(ii) (B) If purchasing power parity holds, then the British inflations rate will be:

$$1.11 / 1.09 = 1.05 / 1 + i_B ; \text{ Or } i_B = \frac{1.09 \times 1.05}{1.11} - 1 = 0.031 \text{ or } 3.1\%$$

$$\text{(iii) (C) Beta} = \left( \text{Beta Equity} \times \frac{E}{D+E} \right) + \left( \text{Beta Debt} \times \frac{D}{D+E} \right) = (1.2 \times 0.70) + (0 \times 0.30) = 0.84$$

Required Rate of Return =  $R_f + \text{Beta} (R_m - R_f) = 10\% + 0.84 (18\% - 10\%) = 10\% + 6.72\% = 16.72\%$

$$\text{(iv) (A) The \% spread on Euro/Pound} = \frac{1.6557 - 1.6543}{1.6543} \times 100 = 0.085\%$$

$$\text{(v) (A) Market value of equity (S)} = \frac{2,40,000 - 72,000(I)}{0.20} = 84,000$$

$$\text{Total value of firm (V)} = S + D = 840000 + 720000 = 1560000 ; K_o = \frac{\text{NOI}}{V} = \frac{2,40,000}{15,60,000} = 0.15385$$

(vi) (A) The price of Swedish kronas = \$0.14 ; At 10% appreciation, it will be worth = \$0.154

A dollar will buy  $1 / 0.154 = 6.49351$  kronas tomorrow

(vii) (C) EBIT to become zero means 100% reduction in EBIT

F. Leverage =  $\text{EBIT} / \text{EBT} = 2700000 / 2295000 = 1.1764$

O. Leverage =  $\text{Contribution} / \text{EBIT} = 3300000 / 2700000 = 1.2222$  ; Combined Leverage =  $1.1764 \times 1.2222 = 1.438$

Sales have to drop by  $100 / 1.438 = 69.54\%$  ; New Sales will be =  $7500000 \times (1 - 0.6954) = '2284500$  (approx)

(viii) (A) Market Value of equity (S) =  $(\text{EBIT} - I) / k_e = ('10,000,000 - 1,400,000) / 0.125$  ; = '68,800,000

Total value of Firm (V) =  $S + D = '68,800,000 + '20,000,000 = '88,800,000$

Overall cost of capital ( $K_o$ ) =  $(\text{EBIT} - I) / V = '10,000,000 / '88,800,000 = 11.26\%$

$$\text{(ix) (C) } 81.33 \times 0.6498 \times 0.01102 = 0.5824$$

(x) (C) Re quote :  $'1 = \$1 / 40 = 0.025$  ; If rupee depreciates by 10%, then =  $0.025 - 0.0025 = '0.0225$

### MCQ Set 5

#### Answer:

(i) (B) Rs. / US \$ =  $1 / 0.01962905 = '50.9449$  ; Now,  $\text{US\$} / \text{€} = 1.335603$

Therefore, The direct quote of € in India will be —  $\text{Rs.} / \text{€} = \text{Rs.} / \$ \times \$ / \text{€} = '50.9449 \times 1.335603 = '68.0420$

(ii) (B)  $E (\text{Rs.} / \$) = 46.50 \times [(1.08)^5 / (1.03)^5] = 46.50 (1.08 / 1.03)^5 = 46.50 \times 1.267455 = '58.94$

Hence expected rate = '58.94 / \$

(iii) (A) Expected return (By CAPM) ;  $R_e = R_f + \text{Beta} (R_m - R_f) = 12\% + 1.6(18\% - 12\%) = 12\% + 9.6\% = 21.6\%$

Price of stock (Dividend growth formula) ;  $Re = D1 / Po + g$  ;  $0.216 = 2.50 / Po + 0.08$  ;  $.216 - .08 = 2.50 / Po$  ;  $.136 = 2.50 / Po$  ;  $Po = 2.50 / 0.136 = '18.38$

(iv) (C) From Interest Rate parity ;  $(¥210 / \$) / (¥190 / \$) = (1 + i¥) / 1.15$  ; Or,  $i¥ = 27.11\%$

(v) (C) PPF Account can be opened in a Head Post Office or branch of SBI or subsidiaries. The rate of interest on these accounts is determined by Central Government.

(vi) (C) Risk free return = Real rate of return + Rate of inflation =  $5.1 + 4.2 = 9.3$  ; Risk Premium = Beta  $(R_m - R_f) = 0.85(12.6 - 9.3) = 2.805$

(vii) (B) Beta =  $Cov_{sm} / Variance_m = 33.56 / 19.15 = 1.75$

(viii) (C)  $[(100 - 86) / '86] \times 365 / 364 \times 100 = 16.32\%$

(ix) (A) Make X - Purchase cost = ' 4.50 million ; Equivalent annual cost =  $4.50 / 6.1446 = ' 0.73235$  million  
Make Y - Purchase cost = ' 6.00 million ; Equivalent annual cost =  $6.00 / 7.6061 = ' 0.78884$  million  
Therefore, equivalent annual cost of make X is lower than make Y, make X is suggested to purchase.

(x) (C) Value of put option = Value of Call option + PV of exercise price – Stock price =  $'(39.60 + 217.40 - 240) = ' 17$

### MCQ Set 6

#### Answer:

(i) (C) Assuming in call option, the total outgo = Premium + Exercise Price = ' 200 + (' 20 × 100) = ' 2,200.  
After 3 months, if the share price is ' 2,500, the net profit = ' 2,500 – ' 2,200 = ' 300.

(ii) (A)  $58.82 / \text{Spot rate} = [(1 + (.06 / 4))^2 / (1 + (.03 / 4))^2]$  ; Spot rate =  $58.82 \times (1 + .03 / 4)^2 \times 1 / (1 + .06 / 4)^2$   
=  $58.82 \times (1.015) \times (1 / 1.030) = ' 57.96$

(iii) (C) Profit margin of 0.08% is deducted from bid rate.  
That is  $46.50 \times .0008 = ' 0.04$  ; Spot bid rate =  $' 46.50 - .04 = ' 46.46$ .

(iv) (B) ROE =  $PAT / Sales \times Sales / Total Assets \times Total Assets / Networth$ ; Therefore ROE =  $0.05 \times 1.5 \times 2 = 0.15$  or 15%

(v) (D) Sharpe's ratio =  $(R_p - R_f) / S.D. = [13 - 10] / 16 = 0.19$  ; Treynor's ratio =  $(R_p - R_f) / Beta = [13 - 10] / 0.90 = 3.33$

(vi) (A) Growth rate = Retention ratio  $\times$  ROE ; =  $0.45 \times 0.16$  ; = 0.072 ;  $P/E = 0.55 / (0.14 - 0.072) = 0.55 / 0.068 = 8.08$

(vii) (B)  $0.18 = R_f + Beta (R_m - R_f)$  ; =  $0.18 = 0.0631 + Beta (0.1437 - 0.0631)$  ; Or,  $0.0806 Beta = 0.1169$ ; Or, Beta =  $0.1169 / 0.0806 = 1.45$  ; Again Beta =  $S.D. i P_{im} / S.D.m$  ; Or,  $S.D. i = Beta S.D. m / P_{im} = (1.45 \times 0.17 / 1.1) = 22.42\%$

(viii) (D) Time Value of Option = Call premium - Intrinsic Value =  $(265 + '12) - ('270) = ' 7$

(ix) (A) Spot Value > Exercise Price / Strike Value => In the money ;  $'4430 > '4410$

(x) (B) The present value of dividend stream to an investor is given as:—  $'4(1.10) * 0.8696 = '3.826$

$$D2 = '4 \times 1.10 \times 1.07 = '4.708 ; \text{Price share} = 4.708 / (0.15-0.07) \times 0.8696 + '3.826 = '55.00$$

### MCQ Set 7

#### Answer:

**(i) (A)** Exercise Price :- ' 240; Current Stock Price :- ' 225 ; Risk free rate of return :- 5% of 0.05  
 Time in year (t) :- 6 / 12 : 0.5 ; Theoretical Minimum Price = Present Value of Exercise Price – Current Stock Price.  
 $= 240 \times e^{-rt} - 225 ; = (240 \div 1.02532) - 225 = 234.07 - 225 = 9.07$

#### **(ii) (C) Computation of Expected Return:**

$$E(R_p) = \text{Proportion of A} \times E(R_A) + \text{Proportion of B} \times E(R_B) \\ = 26(.5) + 22(.5) = 13 + 11 = 24\%$$

#### **Computation of Portfolio Risk**

$$\text{Standard Deviation}_{\text{Portfolio}} = \sqrt{(W_A^2 \times \sigma_A^2) + (W_B^2 \times \sigma_B^2) + (2W_A W_B \sigma_A \sigma_B r)} \\ = \sqrt{0.50^2 \times 20^2 + 0.50^2 \times 24^2 + 2 \times 20 \times 24 \times 0.50 \times 0.50} = 20.30\%$$

**(iii) (B)** When customer is buying dollar under three month forward cover :  $\frac{1.05}{67.20} \times \frac{12}{3} \times 100 = 6.33\%$

When customer is selling dollar under three month forward cover:  $\frac{1.70}{67.20} \times \frac{12}{3} \times 100 = 10.12\%$

Cost of forward cover will be:  $\frac{6.33\% + 10.12\%}{2} = 8.22\%$

**(iv) (D)** Returns = 1.25 + 0.25 – 1.05 = 0.45 ; Return ÷ Opening NAV = 0.45 / 13.50 = 0.033 = 3.33%

Annualised return =  $\frac{3.33 \times 365}{90} = 13.51\% \text{ p.a.}$

#### **(v) (B) Expected value of call option**

<u>Expected share price (₹)</u>	<u>Exercise price (₹)</u>	<u>Call value (₹)</u>	<u>Probability</u>	<u>Call option value (₹)</u>
150	130	20	0.8	16
110	130	0	0.2	0
				16

**(vi) (D)** The % spread on Cross rate between the Euro and NZ \$. Let us find out the Cross rate first.

$$\text{SPOT (Euro / NZ\$)} = (0.5020 \times 1.3904) : (0.5040 \times 1.3908) = 0.6980 : 0.7010$$

$$\text{So, \% Spread on Euro to NZ\$} = [(0 / 7010 - 0.6980) / 0.6980] \times 100 = 0.4298 = 0.43.$$

**(vii) (B)** We know,  $B_p = [\text{Beta Equity} \times \{E / (D+E)\}] + [\text{Beta Debt} \times \{D / (D + E)\}] ; = (1.4 \times 0.75) + (0 \times 0.25) = 1.05;$   
 Rate of return of the Project :-  $R_p = R_f + B_p (R_M - R_f) = 12\% + 1.05 (18\% - 12\%) = 12\% + 6.30\% = 18.30\%$

**(viii) (B)** Pay-back period = Cost of project / Annual cash inflow

$$\text{So, Cost of project} = \text{Annual cash inflow} \times \text{Pay-back period} = 80,000 \times 2.855 = '2,28,400$$

**(ix) (A)** Government securities are free from default risk since government does not default payment.

**(x) (B)** Beta of a security measures its vulnerability of security to market risk. In other words, beta measures the market risk or non-diversifiable risk.

## MCQ Set 8

### Answer:

(i) (B) Capital Appreciation = Closing NAV- Opening NAV = 84 - 72 = '12.

Return = [Cash Dividend +Capital Gain + Capital Appreciation] / Opening NAV =[6+4+12] / 72 = 22 / 72 = 0.3056 = 30.56%.

(ii) (D) Since, Standard Deviation of Gilt-edged security is 0 and its co-relation with the Equity is also 0.

The formula will reduce to:  $\sigma_p = W_2\sigma_2$ ; Or  $24\% = W_2 \times 30\%$  Or,  $w_2 = 24\% / 30\% = 0.24 / 0.30 = 0.8$

We also know, Return of portfolio  $[R_p] = W_1R_1 + W_2R_2 = (1 - W_2) R_1 + W_2R_2$

$= (1 - 0.8) \times 7\% + 0.8 \times 25\% = (0.2 \times 0.07) + (0.8 \times 0.25) = 0.214$

Therefore, return in Rupees = 1,00,000  $\times$  0.214 = '21,400

(iii) (C) Characteristic Line is a graph depicting the relationship between Security' Returns and Market Index Returns.

(iv)(D) Financial risks arises when companies resort to financial leverage or use of debt financing. The more the company resorts to debt finance, the greater is the financial risk. Financial risk is an unsystematic risk, which can be diversified.

(v)(A) To recover Call Option Premium of ' 23, the share price on the date of expiration should rise to [' 23 + ' 280] = ' 303. The buyer of the Call Option would be at break-even if the share price ( $S_1$ ) ends up at ' 303.

(vi) (D) % spread on Euro/ Pound rate =  $\frac{1.6557 - 1.6543}{1.6543} \times 100$

(vii) (A) P: v. of inflows = 6.00  $\times$  5.019 = '30.114 lakhs; Profitability Index =  $\frac{\text{P.V. of Inflows}}{\text{P.V. of Outflows}} = \frac{30.114}{20} = 1.51$

(viii)(B) P. V. of lease rentals = '18 lakhs  $\times$  PVI FA (12%, 8) ; = '18 lakhs  $\times$  4.9676 ; = '89,41,680

(ix)(B) Sharpe's ratio =  $(R_p - R_f) / \sigma = [13 - 10] / 16 = 0.19$

(x)(A) Bp is to be ascertained as = [ Beta equity + E / (D +E) ] + [ Beta debt + E / (D + E) ] = (1.30  $\times$  0.70) + (0  $\times$  0.3) = 0.91 ; Computation of return from the project =  $R_f + Bp (R_M - R_f) = 0.10 + 0.91 \times (0.18 - 0.10) = 0.1728 = 17.28\%$ .

## MCQ Set 9

### Answer: (A)

(i) (D) All the above

(ii) (D) (380 +20) -370= 30

(iii) (C) Dollar direct quoted to be converted to Indirect as 1 / 40=0.025.

Dollar trading at 0.025 depreciates by 10% = (0.025-0.0025) = 0.0225

(iv) (B) Interest @ 11% p.a. for 90 days on '1 = 0.11 $\times$  90 / 365 = 0.0271233 ; Amount after 90 days = 1 + 0.0271233 = 1.0271233 ; Net amount received = ' 3,00,00,000 / 1.0271233 = ' 2,92,07,788 say ' 2.92 crores

(v) (A) Price at the beginning of the year (18  $\times$  1.02) = '18.36 ; Price of unit at the end of the year 18.50  $\times$  (1- .04)

= '17.76 Price of the fund fell by  $(17.76 - 18.36) = -0.60$  ; Rate of return =  $(2.50 - 0.60) / 18.36 = 10.35\%$

(vi) (C) -  $(100 - 86) / (86) \times 365/364 \times 100 = 16.32\%$

(vii) (B)

(viii) (C) Reorder level = Maximum usage per day x Maximum lead time = 50 items per day x 32 days = 1,600 items

(ix) (B)  $\text{Beta}_a = \text{Beta}_d(D/V) + \text{Beta}_e(E/V)$  ;  $1.21 = (0.30 \times 0.3) + (\text{Beta}_e \times 0.7)$  ;  $1.21 = 0.09 + 0.7 \text{Beta}_e$  ;  $\text{Beta}_e = 1.12 / 0.7 = 1.60$

(x) (C) According to Purchase Power Parity, spot rate after 5 years = '  $45 \times [(1 + 0.08) / (1 + 0.03)]^5 = 45 \times 1.2675 =$   
' 57.04

**Answer:** (B) (i) True ; (ii) True ; (iii) True ; (iv) False ; (v) True

### MCQ Set 10

**Answer:** (A)

(i) (D) The working capital requirement is for 45 days of the weighted operating cycle plus normal cash balance = Sales per day x weighted operating cycle + cash balance requirement = ' 5 lac x 45 + ' 0.80 lac = ' 225.80 lac.

(ii) (C)  $\text{DTL} = \text{DOL} \times \text{DFL} = 3 \times 1.67 = 5.01$  Therefore, as per the concept of DTL, in order to increase the EPS by 10% the sales volume will be increased by  $10 - 5.01 = 2\%$

(iii) (A) To purchase (¥) we need to have a quote of (¥) in terms of We need only the ASK quote.  
 $\text{ASK} (' / ¥) = \text{ASK} (' / £) \times \text{ASK} (£ / \$) \times \text{ASK} (\$ / ¥) = 75.33 \times 0.6398 \times 0.01052 = ' 0.5070$  (approx.)

(iv) (C) Margin of Safety	' 12,50,000 @40%	' 5,00,000
BEP Sales	' 12,50,000 - ' 5,00,000	' 7,50,000
Fixed cost	[BEP (s) x p/v ratio] ' 7,50,000 x 50%	' 3,75,000
Contribution	' 12,50,000 x 50%	' 6,25,000
Profit	' 6,25,000 - ' 3,75,000	' 2,50,000

(v) (A)  $\text{Price} = \frac{\text{Dividend}}{\text{Cost of Capital} - \text{GrowthRate}} = \frac{4}{0.20 - 0.12} = \text{Rs.}50$

(vi) (A) Value of put option = Value of call option + PV of exercise price - Stock price = ' 19.80 + ' 108.70 - ' 120 = ' 8.50

(vii) (C) Forward Margin (premium with respect to bid price) ; =  $[(61.02 - 60.34) - 60.34] \times 12 \times 100 = 13.52\%$

(viii) (B) Return on Equity (ROE) =  $\frac{\text{Profit after Tax}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Net Worth}} = 0.06 \times 2.10 \times 2.50 = 0.315 = 31.5\%$

(ix) (A) Future Price = Spot Price + Cost of Carry - Dividend = 440 + (440 x 0.15 x 0.25) - (10 x 0.25)  
= 440 + 16.50 - 2.50 = 454 ; The future price is ' 454 which is now quoted at ' 430 in the exchange. The fair value of Futures is more than the actual future price.



$$(x) (B) \text{ Market Value of Share (P)} = \frac{D + \frac{r}{K_e}(E - D)}{K_e} = \frac{1.80 + \frac{0.20}{0.10}(6 - 1.80)}{0.10}$$

**Answer: (B)**

**(i) False** ; Net float is the total amount of float in a bank account. It is calculated by subtracting the disbursement float money spent but not yet taken out of the account from the collection float money deposited but not yet cleared. The net float, when added to or subtracted from the previous balance, shows how much money is in the bank account. The net float is important when an account holder deal primarily in cheques.

**(ii) True** ; Annual capital charge provided basis of comparing projects whose life span are otherwise different.

**(iii) True** ; According to MM approach it is earning potentiality and investment policy of firm rather than pattern of distribution of earning that affects value of firm.

**(iv) True** ; Simulation is the imitation of the operation of a real-world process or system over time. The act of simulating something first requires that a model be developed; this model represents the key characteristics or behaviours of the selected physical or abstract system or process. The model represents the system itself, whereas the simulation represents the operation of the system over time.

**(v) False** ; Call Options give the option buyer the right to buy the underlying asset. Put Options give the option buyer the right to sell the underlying asset.

### MCQ Set 11

**Answer : (A)**

**(i) (A)** Future Price = Spot Price + Cost of Carry- Dividend = 440 + (440 x 0.15 x 0.25) - (10 x 0.25) = 440 + 16.50 - 2.50 = 454 ; The future price is '454 which is now quoted at '430 in the exchange. The fair value of Futures is more than the actual future price. So, no arbitrage opportunities exist.

**(ii) (D)** Issue price of T-bill is at discounted value and redeemed at face value.

Maturity Period - 91 days ; Face Value - ' 100 ; Yield Rate - 7% or 0.07

Let the issue price of T-Bill be 'x'.

$$\text{Then, } 0.07 = \frac{100 - x}{x} \times \frac{365}{91} \times 100; 0.07 = \frac{100 - x}{x} \times 4.011$$

$$0.07x = 401.10 - 4.011x ; .081x = 401.10 ; X = 401.10/4.081 = 98.28 , \text{ The issue price of T-Bill was ' 98.28.}$$

**(iii) (C)** In the first leg RBI has lent securities and receives money from PNB

**Stage I:**

G Sec pays bi-annual coupons; Interests are paid on April 7 & October 7 ; G Sec Maturity on April 7, 2014;

Days elapsed from October 8, 2012 till Jan 10, 2013 = 24 + 30 + 31 + 9 = 94 days

Accrued Interest: 5 Crores x 0.1199 x 94 / 360 = ' 1565361

Transaction Value = ' 5 Crores x 115 / 100 = ' 57500000

Total Settlement amount = ' 59065361 = Money receive by RBI from PNB

<b>(iv) (C)</b> Margin of Safety	12,50,000 @40%	' 5,00,000
BEP Sales	12,50,000 - 5,00,000	' 7,50,000



Fixed cost	[BEP (s) x p/v ratio] 7,50,000 x 50%	' 3,75,000
Contribution	12,50,000 x 50%	' 6,25,000
Profit	6,25,000 - 3,75,000	' 2,50,000

(v) (C) Theoretical value of a right (Vt) = (P-S) / N+1 = Rs. 5 ; where, N = 2

or, P-S = 5 (2+1) ; or, P=15+ S

Equation (i)

Value of share after right (V<sub>0</sub>) = NP + S where V<sub>0</sub> = ' 75

or, 75 = (2P + S) / 3 ; or, 2P + S = 3 x 75 ; or, 2P + S = 225

Equation (ii)

Putting value of P in equation (ii), we get 2 P + S = 225 ; Or, 2(15+S)+ S = 225 ; Or, 30 + 3S = 225

Or, S = (225-30) / 3 ; Or, S = 65.

**Answer:** (B) (i) True ; (ii) False ; (iii) True ; (iv) False ; (v) True

### MCQ Set 12

**Answer: (A)**

(i) (A) Financial risk

(ii) (A) Financial leverage = 2 (given) EBIT

$$\frac{\text{EBIT}}{\text{EBIT} - \text{INTEREST}} = 2 ; \frac{\text{EBIT}}{\text{EBIT} - 12} = 2 ; 2 \text{ EBIT} - 24 = \text{EBIT} ; \text{EBIT} = '24 \text{ lakhs}$$

(iii) (C)  $K_e = 9\% + 1.40 (16\% - 9\%) = 18.8\%$

(iv) (B) EPS will be negative

$$(v) (A) \text{ Company Value} = \frac{3,00,000 \times 0.6}{0.18} = 10,00,000$$

(vi) (D) all of the above

(vii) (B) When the lessee want to own the asset but does not have enough funds to invest

(viii) (C) Reorder level = Maximum usage per day x Maximum lead time = 50 items per day x 32 days = 1,600 items

(ix) (A) Value of put option = Value of call option + P.V. of exercise price - Stock price = ' 19.80 + ' 108.70 - 120 = ' 8.50

(x) (C) hedging against foreign exchange risk

**Answer: (B)**

(i) **False:** Debt may be perpetual or redeemable debt, while calculating cost of debt, the corporate tax rate effect the formula as follows-

(a) Perpetual / irredeemable debt:

d (after tax) = I / P(1-t) ; Where, t = tax rate, P = net proceeds and kd = Cost of debt, I = Interest

(b) Redeemable debt: (after tax) ;  $K_d = \frac{I + 1/n(P - NP)}{1/2(P + NP)} \times (1 - t)$

(ii) **False:** When evaluating mutually exclusive projects, the one with the highest IRR may not be the one with best NPV. The conflict between NPV and IRR for evaluation of mutually exclusive projects is due to reinvestment assumption: (a) NPV assumes Cash flows reinvested at the Cost of Capital. (b) IRR assumes Cash flows reinvested

at the internal rate of return.

**(iii) True:** We know that Profitability Index (PI) = PV of Cash Inflow/ PV of Cash Outflow. So, if P1 is 1, then cash inflow and cash outflow would be equal.

**(iv) True:** A Cap provides variable rate borrowers with protection against raising interest rates while also retaining the advantages of lower or falling interest rate. Floors are used to obtain certainty for investments and budgeting by setting minimum interest rate on investments

**(v) False:** Commercial Paper (CP) is an unsecured promissory note issued by a firm to raise funds for a short period, generally varying from a few days to a few months

### MCO Set 13

**Answer: (A)**

$$(i) (B) \text{ Opportunity Cost} = \frac{\text{Disc \%}}{100 - \text{Disc \%}} \times \frac{360}{N} = \frac{2}{98} \times \frac{360}{25} = 29.4\%$$

$$(ii) (A) \text{ Market value of Equity (S)} = \frac{\text{EBIT} - I}{K_e} = \frac{10,000,000 - 1,400,000}{0.125} = 68,800,000$$

$$\text{Total value of Firm (V)} = S + D = '68,800,000 + '20,000,000 = '88,800,000$$

$$\text{Overall cost of capital (K}_0\text{)} = \text{EBIT} - I / V = '10,000,000 / '88,800,000 = 11.26\%$$

$$(iii) (B) \text{ Market Value of Share (P)} = \frac{D + \frac{r}{K_e}(E - D)}{K_e} = \frac{1.80 + \frac{0.20}{0.10}(6 - 1.80)}{0.10} = '102$$

**(iv) (D)** Cost of goods sold = '(4,00,000 + 1,900,000 - 500,000) = '1,800,000 ; Inventory turnover = Rs. 1800000/450000 = 4 ; Average age of Inventory = 365 / 4 = 91.3 days

Operating cycle = Average age inventory + Average Collection Period = 91.3 + 42 = 133.3 days

**(v) (A)** Financial Leverage = EBIT / EBT = 3 / 1 ; EBIT = 3EBT ; EBIT - 200 = EBT ; EBIT = 3[EBIT - 200] ; EBIT = '300

$$\text{Operating Leverage} = \frac{S - V}{\text{EBIT}} = \frac{4}{1}$$

$$S - V = 4 \text{ EBIT} = 4 \times 300 = 1200$$

$$(100 - 66.67\%)S = 1200 ; \therefore \text{Sales} = \frac{1200}{33\frac{1}{3}} = \text{Rs. } 3600$$

**(vi) (C)** Re quote : Re.1 = \$1 / 40 = 0.25 ; If rupee depreciates by 10%, then = 0.25 - 0.0025 = '0.0225

**(vii) (A)** Bid (Euro / £) = Bid (Euro / \$) x Bid (\$ / £)

Bid rate for Euro / £ = 1.1916 x 1.42 = 1.6921 ; Ask rate for Euro / £ = 1.1925 x 1.47 = 1.7530

**Quote as Euro/ £ = 1.6921/1.7530**

**(viii) (A)** Market value of equity (S) =  $\frac{2,40,000 - 72,000(I)}{0.20} = 84,000$

Total value of firm (V) = S + D = 840000 + 720000 = 1560000 ;  $K_o = \frac{NOI}{V} = \frac{2,40,000}{15,60,000} = 0.15385$

<b>(ix) (C)</b> Margin of Safety	= 50,00,000@40%	= '2000000
BEP Sales	= 50,00,000 - 20,00,000	= '30,00,000
Fixed cost	= BEP (s) x P / V ratio	= 30,00,000@50% = 15,00,000
Contribution	= 5000000 x 50 / 100	= 25,00,000
Profit	= 25,00,000 - 15,00,000	= '10,00,000

**Answer: (B): (i) False (ii) True (iii) True (iv) True (v) True (vi) False (vii) True**

**.MCQ Set 14**

**Answer: (A)**

**(i) (C)**  $K_e = 27 / 150 \times 100 = 18\%$  ;  $K_e = DPS / 160 = 18\%$  ;  $DPS = 160 \times 18\% = '28.80$

**(ii) (A)** Current Ratio = Current Asset / Current Liabilities =  $300000 - X / 200000 - X = 2$  ; Or,  $(300000 - X) = 2(200000 - X)$  ; Or,  $X = 100000$

**(iii) (B)** If purchasing power parity holds, then the British inflations rate will be:

$1.11 / 1.09 = 1.05 / 1 + i_B$  ; Or  $i_B = \frac{1.09 \times 1.05}{1.11} - 1 = 0.031$  or 3.1%

**(iv) (B)** Safety Stock =  $100 \times 3 = 300$  units

Re- order level = (Normal Daily Usage x Normal Lead Time) + Safety Stock =  $(1000 \times 3) + 300 = 3300$  units

**(v) (C)** Beta =  $\left( \text{Beta Equity} \times \frac{E}{D+E} \right) + \left( \text{Beta Debt} \times \frac{D}{D+E} \right) = (1.2 \times 0.70) + (0 \times 0.30) = 0.84$

Required Rate of Return =  $R_f + \text{Beta} (R_m - R_f) = 10\% + 0.84 (18\% - 10\%) = 10\% + 6.72\% = 16.72\%$

**(vi) (A)**  $DOL = \frac{\text{Contribution}}{EBIT} = \frac{\text{Sales} - VC}{\text{Sales} - VC - \text{Fixed Cost}} = \frac{800 - 0.625(800)}{800 - 0.625(800) - 100} = 1.5$

Which is given by 1% increase in sales. Therefore, by 5% increase in sales, Change in EBIT will be by  $1.5 \times 5\% = 7.5\%$

**(vii) (A)** The % spread on Euro/Pound =  $\frac{1.6557 - 1.6543}{1.6543} \times 100 = 0.085\%$

**Answer: (B)**

**(i) D Mailing Float; (ii) C Cheque Processing Float ; (iii) B Banking Processing Float (iv) A Billing Float**

**Answer: (C): (i) True ; (ii) True ; (iii) False ; (iv) True ; (v) True ; (vi) True ; (vii) True ; (viii) True ; (ix) True**

## MCQ Set 15

### Answer:

(i) (B) Expected Return on Portfolio,  $R_p = R_f + p \times (R_m - R_f) = 10\% + 0.30(15\% - 10\%) = 11.5\%$

(ii) (B) First of all we shall calculate premium payable to bank as follows:

$$P = \frac{rp}{\left[ (1+i) - \frac{1}{i \times (1+i)t} \right]} \times A$$

; Where, P = Premium; A = Principal Amount; rp = Rate of Premium; i = Fixed Rate of Interest; t = Time

$$= \frac{0.01}{\left[ (1+0.035) - \frac{1}{0.035 \times (1.035)^4} \right]} \times \text{£}15,000,000 = \text{£}40,861$$

### (iii) (D) Intrinsic value of Bond :

PV of Interest + PV of Maturity Value of Bond ; Forward rate of interests :- 1st Year - 12% ; 2nd Year - 11.25% ; 3rd Year - 10.75%

$$\text{PV of interest} = \frac{90}{(1+0.12)} + \frac{90}{(1+0.12)(1+0.1125)} + \frac{90}{(1+0.12)(1+0.1125)(1+0.1075)} = ' 217.81$$

$$\text{PV of Maturity Value of Bond} = \frac{1000}{(1+0.12)(1+0.1125)(1+0.1075)} = ' 724.67$$

$$\text{Intrinsic value of Bond} = ' 217.81 + ' 724.67 = ' 942.48$$

$$\text{(iv) (C) Calculation of Market Price: YTM} = \frac{\text{Coupon Interest} + \left( \frac{\text{Disc. Or Prem.}}{\text{Years Left}} \right)}{\frac{\text{Face Value} + \text{Market Value}}{2}}$$

Discount or premium - YTM is more than coupon rate, market price is less than Face Value i.e. at discount.

$$\text{Let } x \text{ be the market price: } 0.15 = \frac{110 + \left\{ \frac{(1,000 - X)}{6} \right\}}{\frac{1,000 + X}{2}} ; X = ' 834.48$$

(v) (A) To compute perfect hedge we shall compute Hedge Ratio as follows:

$$\text{Hedge Ratio} = \frac{C_1 - C_2}{S_1 - S_2} = \frac{150 - 0}{780 - 480} = \frac{150}{300} = 0.50 ; \text{Mr. Dayal should purchase 0.50 share for every 1 call option.}$$

(vi) (B) **Current Portfolio :** Current Beta for share = 1.4 ; Beta for cash = 0

$$\text{Current portfolio beta} = \frac{120 \text{ Lakhs}}{130 \text{ Lakhs}} \times 1.4 + 0 \times \frac{10 \text{ Lakhs}}{130 \text{ Lakhs}} = 1.2923$$

(vii) (D) Let the Return on Mutual Funds be ' X

Investor's Expectation denotes the Return from the amount invested.

$$\text{Returns from mutual funds} = \frac{\text{Investor's Expectation}}{100 - \text{Issue Expenses}} + \text{Annual Recurring Expenses}$$

$$X = \frac{16}{(100 - 5.7)\%} + 1.7 = 18.67\%$$

Return that the Mutual Fund should earn so as to provide a return of 16% = 18.67%

**(viii) (B)** At first, NPV and IRR of the projects are calculated and it has been found that,  $NPV_a < NPV_b$ ;  $IRR_a > IRR_b$ . The above results indicate that there is a conflict in ranking of the projects under NPV and IRR. Such conflict is mainly due to the difference in the initial investment of the projects and it can be resolved using incremental approach as follows.

Differential Cash Outflows = 25,00,000 ; Differential Net Cash Inflows = 29,00,000

We know that IRR is the discount rate at which Present Value of Cash Inflows are equal to the Present Value of Cash Outflows. So,  $25,00,000 = 29,00,000 / (1 + r)^1$  ; Or,  $1 + r = 29,00,000 / 25,00,000$  ; Or,  $r = 1.16 - 1 = 0.16$

IRR (r) of the differential cash flows = 16%, which is greater than Cost of Capital (k).

Therefore, Project with higher non-discounted cash inflows, i.e., **Project B would be selected.**

**(ix) (B)** The cash flows for this bond are as follows: 10 annual coupon payments of ' 1200 ; '10,000 principal repayment 10 years from now

The value of the bond is:  $P = 1200 \times (\text{PVIFA } 13\%, 10 \text{ years}) + 10,000 \times (\text{PVIF } 13\%, 10 \text{ years})$

$$P = 1200 \times 5.426 + 10,000 \times 0.295; P = 6511.2 + 2950 P = '9461.2$$

**(x) (A)** Government securities are free from default risk since government does not default payment.

### MCQ Set 16

#### Answer:

**(i) (A)** As per MM model, the current market price of equity share is:

$$P_0 = \frac{1}{1 + k_e} \times (D_1 + P_1); \text{ If the dividend is declared: } 150 = \frac{1}{1 + 0.10} \times (9 + P_1) = '156$$

**(ii) (C)** Pre-tax income required on investment of ' 30,00,000 is ' 1,80,000.

Let the period of investment be 'P' for return required on investment '1,80,000 ('30,00,000 x 6%)

$$\text{Accordingly, } \left( '30,00,000 \times \frac{10}{100} \times \frac{P}{12} \right) - 45,000 = 1,80,000; P = 9 \text{ months.}$$

#### **(iii) (C) Computation of Expected Return:**

$$E(R_p) = \text{Proportion of A} \times E(R_A) + \text{Proportion of B} \times E(R_B) = 26(.5) + 22(.5) = 13 + 11 = 24\%$$

#### **Computation of Portfolio Risk**

$$\text{Standard Deviation}_{\text{Portfolio}} = \sqrt{(W_A^2 \times \sigma_A^2) + (W_B^2 \times \sigma_B^2) + (2W_A W_B \sigma_A \sigma_B r)}$$

$$= \sqrt{0.50^2 \times 20^2 + 0.50^2 \times 24^2 + 2 \times 20 \times 24 \times 0.50 \times 0.50} = 20.30\%$$

**(iv) (D)** The % spread on Cross rate between the Euro and NZ \$. Let us find out the Cross rate first.

$$\text{SPOT (Euro / NZ)} = (0.5020 \times 1.3904) : (0.5040 \times 1.3908) = 0.6980 : 0.7010$$

$$\text{So, \% Spread on Euro to NZ \$} = [(0 / 7010 - 0.6980) / 0.6980] \times 100 = 0.4298 = 0.43.$$

(v) (B) Sharpe's ratio =  $(R_p - R_f) / S.D. = [13 - 10] / 16 = 0.19$

(vi) (B) Beta of Share - 2.5 ; Market Return - 14% ; Risk Free Rate of Return - 8% ; Growth rate of Dividends - 5% ; Last Year's dividend - `2

**(1) Computation of Expected Return**

Expected Return  $[E(R_a)] = R_f + [P_a \times (R_m - R_f)] = 0.08 + [2.5 \times (0.14 - 0.08)] = 0.08 + 2.5 (0.14 - 0.08) = 0.08 + 0.15 = 0.23$  i.e.,  $K_e = 23\%$

**(2) Intrinsic Value of share** =  $D_1 / (K_e - g) = D_0 \times (1 + g) / (K_e - g) = 2 \times (1 + 0.05) / (0.23 - 0.05) = ` 11.67$

The Intrinsic Value of share A is ` 11.67.

(vii) (B) In this case,  $S_0 = 69$ ,  $K = 70$ ,  $r = 0.05$ ,  $S.D. = 0.35$  and  $T = 0.5$

$$D1 = \frac{\ln(60/70) + [(0.35)^2 \div 2] \times 0.5}{0.35\sqrt{0.5}} = 0.166; D2 = D1 - 0.35\sqrt{0.5} = -0.0809$$

The price of the European put is :-  $70e^{-0.05} \times 0.5 N(0.0809) - 69 N(-0.1666)$   
 $= 70e^{-0.05} \times 0.5323 - 69 \times 0.4338 = 6.40.$

(viii) (C) Characteristic Line is a graph depicting the relationship between Security Returns and Market Index Returns.

(ix) (B) Beta of a security measures its vulnerability of security to market risk. In other words, beta measures the market risk or non-diversifiable risk.

(x) (A) Arbitrage opportunity exists ; (i) Cost of future = `16.80 ;

(ii) Cost of Pepper = Present Value of Exercise Price + Value of Call - Value of Put ; = `18 + `0.45 - `0.58 = ` 17.87

### MCO Set 17

Answer:

(i) (B) 19.6%

(ii) (D) Financial risks arise when companies resort to financial leverage or use of debt financing. The more the company resorts to debt finance, the greater is the financial risk. Financial risk is an unsystematic risk, which can be diversified.

(iii) (D) Project beta = equity beta x weight of equity + debt beta x weight of debt =  $1.4 \times 70\% + 0 \times 30\% = 0.98$ . Here taxation has been ignored in calculating weights as the rate is not given.

(iv) (A) Initial margin =  $(7\% \times 9300 \times 55) = 35805$  ; Gain = 6% ; Return (6% of Initial margin) = 2148 ; Return per unit =  $2148 / 55 = 39.05$  ; Index value should rise to =  $9300 + 39.05 = 9339.05$

(v) (C) Value of call option + P.V of exercise price = Spot rate - Value of put option ; Or,  $39.60 + 217.40 = 240 +$  Value of put option Value of put option = ` 17

(vi) (A) Portfolio variance =  $20^2 \times 0.5^2 + 24^2 \times 0.5^2 + 2 \times 0.5 \times 0.5 \times 20 \times 24 \times 0.7 = 412$  ; Portfolio risk =  $\sqrt{412} = 20.30\%$

(vii) (A) Ask (Rs./ ¥) = Ask (Rs. / £) x Ask (£ / \$) x Ask (\$ / ¥) =  $75.33 \times 1.565 \times 1.052 = ` 124.02$

(viii) (A) Equivalent annuity = Cost / PVIFA ; Equivalent Annuity for X = 4.5 million / PVIFA (10%, 10) = 4500000 / 6.1446 = ' 732350 ; Equivalent Annuity for Y = 6 million / PVIFA (10%, 15) = 6000000 / 7.6061 = ' 788840;  
**So, X is cheaper.**

(ix) (A) Cost of equity = Rf + Beta (Rm- Rf) = 12+1.5(16-12) = 18%

(x) (D) Forward premium (annualized) =  $\frac{\text{Forward Rate} - \text{Spot Rate}}{\text{Spot Rate}} \times \frac{12}{6} \times 100 = \frac{49.5 - 48.55}{48.55} \times \frac{12}{6} \times 100 = 2.66\%$

### MCQ Set 18

**Answer:**

(i) (D) Funding liquidity risk is a financial risk due to uncertain liquidity. An institution might lose liquidity if its credit rating falls, it experiences sudden unexpected cash outflows, or some other event causes counterparties to avoid trading with or lending to the institution. A firm is also exposed to liquidity risk if markets on which it depends are subject to loss of liquidity.

(ii) (A) Inflation rate signifies the rate of increase in the prices of goods and services.

(iii) (A) There are basically three options, viz. Accept Transfer, Mitigate and Avoid.

(iv) (C) Portfolio return = 0.4 x 12 + 0.6 x 16 = 14.4%

(v) (D) He has initially received ' (2.50 + 2.50) = ' 5.00 ; When spot price is less than ' 47 put option is exercised and call option is not exercised and vice versa. Thus, the price should remain in the range of (47-5) to (47+5) i.e. ' 42 to ' 52 to ensure gain to the option writer.

(vi) (A) Spot quote is US \$ 1 = ' 45.02 - 45.04 and forward premium is 20-25.  
 So, forward quote will be = ' (45.02 + 0.20) - (45.04 + .0.25) i.e. ' 45.22 - 45.29.  
 So, bank will quote ' 45.29 to sell a 3 month forward buying contract.

(vii) (A) Cost of equity = Expected dividend/Current Market Price + Growth rate = 1 (1+.05) / 20 + 0.05 = 10.25%

(viii) (B) Beta = Covariance / variance of market return

$$\frac{\text{Covariance}}{\text{S.D. of Market Return} \times \text{S.D. of Stock Return}} \times \frac{\text{S.D. of Stock Return}}{\text{S.D. of Market Return}} = \text{Correlation} \times \frac{\text{S.D. of Stock Return}}{\text{S.D. of Market Return}}$$

$$0.8 \times \frac{0.04}{0.025} = 1.28$$

(ix) (B) Expected NPV = 30000 x 0.1 + 60000 x 0.3 + 120000 x 0.4 + 150000 x 0.2 = 99000 ;  
 Cost of the project = 300000; Total PV = 300000 + 99000 = 399000; So, PI = 399000 / 300000 = 1.33

(x) (A) Treynor ratio for Vreedhi = (14- 6) / 1.4 = 5.71 and for Mitra = (16-6) / 1.5 = 6.67

### MCQ Set 19

**Answer:**

(i) (B) The absence of the need for regular income. The investment constraints for investments are liquidity, age,



need for regular income, time horizon, risk tolerance and tax liability.

(ii) (A) The synthetic rate for \$ / £ is to be calculated. Here, rupee, the price currency (i.e. common currency) is the cheapest among the three currencies involved in the quotes.

The formula is: \$ / £ = [(Rs. / £ bid) / (Rs. / \$ ask)] : [(Rs. / £ ask) / (Rs. / \$ bid)] = [100.68 / 62.87] : [102.95 / 61.86] = 1.6014 : 1.6642; So, \$ / £ = \$ 1.6014 - \$ 1.6642

(iii) (C) Forward price of securities = ' 160 × e<sup>(0.09)(0.50)</sup> = ' 160 × e<sup>0.045</sup> = ' 160 × 1.046028 = ' 167.3645.

(iv) (D) Beta<sub>p</sub> is to be ascertained as = [Beta<sub>E</sub> + E / (D + E)] + [Beta<sub>D</sub> + E / (D + E)] = (1.30 × 0.70) + (0 × 0.3) = 0.91

(v) (B) Assuming in call option, the total outgo Premium + Exercise Price = ' 150 + (' 15 × 100) = ' 1650; After 3 months, if share price is ' 2000, the net profit = 2000 – 1650 = ' 350.

(vi) (D) Let the return on mutual fund be ' x. Investors expectation denotes the return from the amount invested.

Return from mutual funds =  $\frac{\text{Investor's Expectation}}{(100 - \text{Issue Expenses})} + \text{Annual Recurring Expenses}$ ; Or,  $X = \frac{18}{(100 - 6.7)\%} + 1.7 =$

21% Hence, Mutual fund should earn so as to provide a return of 18% = 21%.

(vii) (B) Initial margin = (5% × 9200 × 75) = 34500; Gain = 4% ; Return (4% of Initial Margin) = 1380; Return per unit = 1380 / 75 = 18.4; Index value should rise to = 9200 + 18.4 = 9218.4

(viii) (C)  $K_e = \frac{\text{Dividend Per Share}}{\text{Market Price Per Share}} + g = \frac{75 \times 30\%}{300} + 6\% = 13.5\%$

(ix) (A) The Co-efficient of Variation is the ratio of standard deviation to mean.

<u>Alternative</u>	<u>Expected Return (%)</u>	<u>Standard Deviation of Return (%)</u>	<u>Co-efficient of Variation</u>
I	23	8	0.35
II	20	9.5	0.48
III	18	5	0.28

**Alternative III is the best as its co-efficient of variation is the lowest.**

(x) (D) Rupee is appreciating by 10% ; Value of dollar is = 68.5 / (1+10%) × 90 = ' 5604.55

### MCQ Set 20

Answer 1.

(i) (D) 5 year deposit has maturity of more than 1 year. Hence it is not a security in the money market.

(ii) (C) As per MM approach the dividend payout ratio is 100%, i.e there are no retained earnings.

(iii) (B) To know with certainty the quantum of future cash flows.

(iv) (B) According to Du-Pont Analysis,  $ROE = \left( \frac{\text{Net profit}}{\text{Sales}} \right) \times \left( \frac{\text{Sales}}{\text{Avg. Assets}} \right) \times \left( \frac{\text{Avg. Assets}}{\text{Avg. Equity}} \right)$

$$\frac{\text{Avg. Assets}}{\text{Avg. Equity}} = \frac{1}{(1 - 0.60)} = 2.50; \text{ROE} = 0.05 \times 2 \times 2.5 = 0.25 \text{ i.e. } 25\%.$$

(v) (A) Current Ratio less than 1 indicates use of Current Assets in funding long term liabilities.

(vi) (D)  $P_3 = D_4 / (K_e - g) = D_0 (1+g)^4 / (K_e - g) = 3 (1+0.08)^4 / 0.12-0.08 = 3 \times (1.360) / 0.04 = 4.08 / 0.04 = \text{Rs. } 102/-$

(vii) (C) According to purchase power parity, spot rate after 5 years  
 = Rs. 45 x [(1+0.08) / (1+0.03)] = 45 [1.469 / 1.159] = 45 x 1.2675 = 57.04.

(viii) (D) The working capital requirement is for 45 days of the weighted operating cycle plus normal cash balance  
 = Sales per day x weighted operating cycle + cash balance requirement = Rs.5 lac x 45 + ' 0.80 lac = Rs. 225.80 lac.

(ix) (A) Rs. 47.20 x 5,00,000 = Rs. 2,36,00,000.

(x) (C) Value of put option = Value of Call option + PV of exercise price - Stock price = Rs. (39.60 + 217.40 - 240) = Rs. 17.

### MCQ Set 21

#### Answer:

#### (i) (B) Particulars

	<u>Rs.</u>
Cost of machine (8,000 + 3,500)	11,500.00
Less : Depreciation @ 10% (1-4-2008 to 31-3-2011) (Rs. 11,500 x 10 / 100 x 3 years)	3,450.00
Book value as on 1-4-2011	8,050.00
Less : Depreciation @ 10% (1-4-2011 to 30-6-2011) (Rs. 11,500 x 10 / 100 x 3 / 12)	287.50
Book value as on 30-6-2011	7,762.50
Sale value	6,500.00
<b><u>Loss on sale of machine</u></b>	<b><u>1,262.50</u></b>

#### (ii) (D) Particulars

	<u>Rs.</u>
Total issued amount (30,000 x Rs. 150)	45,00,000
Less : Floatation cost (Rs. 45,00,000 x 5 / 100)	2,25,000
Net proceeds from issue	42,75,000
Annual interest charge = Rs. 45,00,000 x 14 / 100 = Rs. 6,30,000	

$$K_d = \frac{I(1-t)}{NP} = \frac{6,30,000(1-0.40)}{42,75,000} = 8.84\%$$

#### (iii) (A) Make A

Purchase cost = Rs. 4.50 million ; Equivalent annual cost = 4.50 / 6.1446 = Rs. 0.73235 million

#### Make B

Purchase cost = Rs. 6.00 million; Equivalent annual cost = 6.00 / 7.6061 = 0.78884 million

Therefore, equivalent annual cost of make A is lower than make B, **make A is suggested to purchase.**

(iv) (B)  $b_A = b_d (D / V) + b_e (E / V); 1.21 = (0.30 \times 0.3) + (b_e \times 0.7); b_e = 1.60$

$$(v) (C) \text{ Value of right} = \frac{r(M-S)}{N+r}$$

Where, r = number of rights issued = 4 ; N = Number of equity shares = 5 ; M = Market price = Rs. 395 ; S = Issue

$$\text{price of rights} = \text{Rs. } 100 + (\text{Rs. } 100 \times 160\%) = \text{Rs. } 260 ; \text{ Value of right} = \frac{4(395-260)}{5+4} = \text{Rs. } 260$$

(vi) (B)  $B_0 = B_n \times PVIF (K\%, n \text{ years})$  ; Where,  $B_n = \text{Rs. } 1,000$ ;  $n = 5 \text{ years}$ ;  $K\% = 11.5\%$  ; incentive = 0.015 ;  $B_0 = \text{Rs. } 1,000 \times 0.5803 = \text{Rs. } 580.30$  ; Issue price will be =  $\text{Rs. } 580.30 (1 - 0.015) = \text{Rs. } 571.60$  or  $\text{Rs. } 572$

**(vii) (A) Expected value of call option**

<u>Expected share price (Rs.)</u>	<u>Exercise price (Rs.)</u>	<u>Call value (Rs.)</u>	<u>Probability</u>	<u>Call option value (Rs.)</u>
150	130	20	0.8	16
110	130	0	0.2	0
				<b>16</b>

(viii) (A) Expected premium =  $(0.6 \times \text{Rs. } 2,00,000) + [0.4 \times (-) \text{Rs. } 1,50,000] - \text{Rs. } 25,000$   
 =  $\text{Rs. } 1,20,000 - \text{Rs. } 60,000 - \text{Rs. } 25,000$  ; =  $\text{Rs. } 35,000$

(ix) (B) Managed float

(x) (D) Interest rate floors

**MCO Set 22**

**Answer:**

(i) (C) Importer will have FC liability and settle the same with maturity proceeds of FC asset created. Exporter will get the asset value from overseas customer and settle FC liability there itself.

**(ii) (A) Make A**

Purchase cost =  $\text{Rs. } 4.50 \text{ million}$  ; Equivalent annual cost =  $4.50 / 6.1446 = \text{Rs. } 0.73235 \text{ million}$

**Make B**

Purchase cost =  $\text{Rs. } 6.00 \text{ million}$ ; Equivalent annual cost =  $6.00 / 7.6061 = 0.78884 \text{ million}$

Therefore, equivalent annual cost of make A is lower than make B, **make A is suggested to purchase.**

(iii) (C) According to Purchase Power Parity, spot rate after 5 years =  $' 45 \times [(1 + 0.08) / (1 + 0.03)]^5 = 45 \times 1.2675$   
 =  $' 57.04$

(iv) (B)  $b_A = b_d (D / V) + b_e (E / V)$ ;  $1.21 = (0.30 \times 0.3) + (b_e \times 0.7)$  ;  $b_e = 1.60$

$$(v) (C) \text{ Interest Yield} = \frac{F - P}{P} \times \frac{365}{\text{Maturity Period}} \times 100 ; 0.05 = \frac{50,00,000 - P}{P} \times \frac{365}{45} = 49,69,367$$

**The investment amount will be ' 49,69,367**

(vi) (A)  $V_0 = (0.3 \times 0) + 0.4 (' 250 - ' 240) + 0.3 (' 280 - ' 240) = ' 16$

(vii) (A) Using Interest Rate Parity Forward rate after 3 months =  $\text{US\$ } 0.6592 / \text{DM}$

(viii) (D) Dividend is paid on the shares

(ix) (B) Interest @ 11% p.a. for 90 days on Re 1 = 0.0271233 ; Amount after 90 days = 1 + 0.0271233 = 1.0271233  
 Net amount received = ' 3,00,00,000 / 1.0271233 = ' 2,92,07,788 say ' 2.92 crores

(x) (C) Retained earnings per share = ' 4 ; EPS = ' 4 x 100 / 40 = ' 10 ; Dividend = ' 10 x 60 / 100 = ' 6  
 Cost of equity (K) =  $D^{\circ} (1 + g) / P_0 + g = 6 (1 + 0.10) / 55 + 0.10 = 0.22$  or 22%

### MCO Set 23

**Answer: (A)**

(i) (B)  $b_A = b_d (D / V) + b_e (E / V)$ ;  $1.21 = (0.30 \times 0.3) + (b_e \times 0.7)$ ;  $b_e = 1.60$

(ii) (A) **Expected value of call option**

<u>Expected share price (Rs.)</u>	<u>Exercise price (Rs.)</u>	<u>Call value (Rs.)</u>	<u>Probability</u>	<u>Call option value (Rs.)</u>
150	130	20	0.8	16
110	130	0	0.2	0
				<b>16</b>

(iii) (B) **Particulars Rs.**

Cost of machine (8,000 + 3,500)	11,500.00
Less : Depreciation @ 10% (1-4-2008 to 31-3-2011) (Rs. 11,500 x 10 / 100 x 3 years)	3,450.00
Book value as on 1-4-2011	8,050.00
Less : Depreciation @ 10% (1-4-2011 to 30-6-2011) (Rs. 11,500 x 10 / 100 x 3 / 12)	287.50
Book value as on 30-6-2011	7,762.50
Sale value	6,500.00
<b><u>Loss on sale of machine</u></b>	<b><u>1,262.50</u></b>

(iv) (A) **Make A**

Purchase cost = Rs. 4.50 million ; Equivalent annual cost =  $4.50 / 6.1446 = \text{Rs. } 0.73235$  million

**Make B**

Purchase cost = Rs. 6.00 million; Equivalent annual cost =  $6.00 / 7.6061 = 0.78884$  million

Therefore, equivalent annual cost of make A is lower than make B, **make A is suggested to purchase.**

(v) (A) Expected premium =  $(0.6 \times ' 2,00,000) + [0.4 \times (-) ' 1,50,000] - ' 25,000$  ;  
 = ' 1,20,000 - ' 60,000 - ' 25,000 ; = ' 35,000

(vi) (C) **Theoretical value of a right (Vt)** =  $(P-S) / N+1 = ' 5$  where,  $N = 2$

or,  $P - S = 5(2+1)$ ; or,  $P = 15 + S$

**Equation (i)**

Value of share after right (Vo) =  $NP + S$  where,  $Vo = ' 75$

Or,  $75 = (2P + S) / 3$  ; Or,  $2P + S = 3 \times 75$  ; Or,  $2P + S = 225$

**Equation (ii)**

Putting value of P in equation (ii), we get  $2P + S = 225$  ; Or,  $2(15 + S) + S = 225$  ; Or,  $30 + 3S = 225$ ;

Or,  $S = (225-30) / 3$  ; Or,  $S = 65$ .

(vii) (B) Let , lease rental per annum be , x

' 500000 =  $x + x / (1+0.1) + x / (1+0.1)^2 + \dots + x / (1+0.1)^9$

=  $x + 5.759 x = 6.759 x$  ; Or,  $x = ' 500000 / 6.759 = ' 73975$ .

(viii) (B) To know with certainty the quantum of future cash flows.

(ix) (D) The working capital requirement is for 45 days of the weighted operating cycle plus normal. Cash balance = Sales per day x weighted operating cycle+ cash balance requirement = ' 5 lac x 45 + ' 0.80 lac = ' 225.80 lac.

**(x) (A)** To purchase (¥) we need to have a quote of (¥) in terms of Rs. we need only the ASK quote.  
 $ASK (Rs. / ¥) = ASK (Rs. / £) \times ASK (£ / \$) \times ASK (\$ / ¥)$   
 $= 75.33 \times 0.6398 \times 0.01052 = ' 0.5070$  (approx.)

**Answer: (B)**

**(i) (C) ; (ii) (B) ; (iii) (C) ; (iv) (A) ; (v) (D) ; (vi) (C) ; (vii) (B) ; (viii) (A) ; (ix) (D) ; (ix) (B)**

**Answer: (C) (i) True ; (ii) True ; (iii) True ; (iv) True ; (v) False**

**MCO Set 24**

**Answer 1.**

**(i) (C)** Importer will have FC liability and settle the same with maturity proceeds of FC asset created. Exporter will get the asset value from overseas customer and settle FC liability there itself.

**(ii) (C) Theoretical value of a right (Vt)** =  $(P-S) / N+1 = ' 5$  where,  $N = 2$

or,  $P- S = 5(2+1)$ ; or,  $P = 15 + S$

**Equation (i)**

Value of share after right ( $V_0$ ) =  $NP + S$  where,  $V_0 = ' 75$

Or,  $75 = (2P + S) / 3$  ; Or,  $2P + S = 3 \times 75$  ; Or,  $2P + S = 225$

**Equation (ii)**

Putting value of P in equation (ii), we get  $2P + S = 225$  ; Or,  $2(15 + S) + S = 225$  ; Or,  $30 + 3S = 225$  ;

Or,  $S = (225-30) / 3$  ; Or,  $S = 65$ .

**(iii) (B)** Let , lease rental per annum be , x

$' 500000 = x + x / (1+0.1) + x / (1+0.1)^2 + \dots + x / (1+0.1)^9$

$= x + 5.759 x = 6.759 x$  ; Or,  $x = ' 500000 / 6.759 = ' 73975$ .

**(iv) (B)** To know with certainty the quantum of future cash flows.

**(v) (D)** The working capital requirement is for 45 days of the weighted operating cycle plus normal cash balance  
 $= \text{Sales per day} \times \text{weighted operating cycle} + \text{cash balance requirement} = ' 5 \text{ lac} \times 45 + ' 0.80 \text{ lac} = ' 225.80 \text{ lac}$ .

**(vi) (D)** All of the above

**(vii) (A)** To purchase (¥) we need to have a quote of (¥) in terms of Rs. we need only the ASK quote.

$ASK (Rs. / ¥) = ASK (Rs. / £) \times ASK (£ / \$) \times ASK (\$ / ¥)$

$= 75.33 \times 0.6398 \times 0.01052 = ' 0.5070$  (approx.)

**(viii) (B) Profitability of credit sales**

**(Rs.)**

Credit sales	5,00,000
Less : Cost of sales ( $5,00,000 \times 75 / 100$ )	3,75,000
	1,25,000

Less : Cost of granting credit

Default risk ( $5,00,000 \times 5 / 100$ )	25,000
--	--------

Opportunity cost ( $5,00,000 \times 60 / 365 \times 15 / 100$ )	12,330
---	--------

Administration cost ( $5,00,000 \times 2/100$ )	10,000
---	--------

47,330

**Net profit**

**77,670**

(ix) (A) Expected premium =  $(0.6 \times 2,00,000) + [0.4 \times (-) 1,50,000] - 25,000 = 1,20,000 - 60,000 - 25,000 = 35,000$

(x) (B) Dollar deposit beyond the control of monetary authority.

### MCO Set 25

#### Answer (A)

(i) (D) ; (ii) (C) ; (iii) (B) ; (iv) (D) ; (iv) (B) ; (vii) (B) ; (vii) (A) ; (viii) (D) ; (ix) (C) ; (x)(B)

#### Answer (B)

##### (i) (D) Particulars

	<u>Rs.</u>	
Total issued amount (30,000 x Rs. 150)		45,00,000
Less : Floatation cost (Rs. 45,00,000 x 5 / 100)		2,25,000
Net proceeds from issue		42,75,000
Annual interest charge = Rs. 45,00,000 x 14 / 100 = Rs. 6,30,000		

$$K_d = \frac{I(1-t)}{NP} = \frac{6,30,000(1-0.40)}{42,75,000} = 8.84\%$$

(ii) (C) Fixed income funds = Preference share capital + Debentures + Term loans  
 = ` 32,00,000 + ` 25,00,000 + ` 10,00,000 = ` 67,00,000

Equity funds = Equity share capital + General reserve + Securities premium  
 = ` 25,00,000 + ` 14,00,000 + ` 6,00,000 = ` 45,00,000

Total funds used in the capital structure = ` 67,00,000 + ` 45,00,000 = ` 1,12,00,000

##### (iii) (A) Make X

Purchase cost = Rs. 4.50 million ; Equivalent annual cost =  $4.50 / 6.1446 = \text{Rs. } 0.73235 \text{ million}$

##### Make Y

Purchase cost = Rs. 6.00 million; Equivalent annual cost =  $6.00 / 7.6061 = 0.78884 \text{ million}$

Therefore, equivalent annual cost of make X is lower than make B, **make X is suggested to purchase.**

(iv) (B) MPBF under second method = (75% current assets) – (Current liabilities other than bank borrowings)  
 =  $(40,000 \times 75 / 100) - 10,000 = 20,000$

##### (v) (B) Profitability of credit sales

(Rs.)

Credit sales		5,00,000
Less : Cost of sales ( $5,00,000 \times 75 / 100$ )		3,75,000
		1,25,000
Less : Cost of granting credit		
Default risk ( $5,00,000 \times 5 / 100$ )		25,000
Opportunity cost ( $5,00,000 \times 60 / 365 \times 15 / 100$ )		12,330
Administration cost ( $5,00,000 \times 2/100$ )		10,000
		47,330
<b><u>Net profit</u></b>		<b><u>77,670</u></b>

(vi) (A) To purchase (¥) we need to have a quote of (¥) in terms of Rs. ; We need only the ASK quote.  
 ASK (Rs. / ¥) = ASK (Rs. / £) x ASK (£ / \$) x ASK(\$ / ¥) =  $75.33 \times 0.6398 \times 0.01052 = 0.5070$  (approx.)

**(vii) (A)**

Today's valuation

Next day's valuation

Gain / (loss)

**Net Gain = '0.13200 - '0.1000 lac = ' 3200/-.**

**Value of bought shares**

50 x 10000 = '5.00 lac

49 x 10000 = '4.90 lac

2% dropped = Rs0.10 lac

**Value of short future**

400 x 2200 = '8.80 lac

400 x 2167 = ' 8.668 lac

1.5% dropped = '0.132 lac

**(viii) (C)** According to Purchase Power Parity, spot rate after 5 years = ' 45 x [(1 + 0.08) / (1 + 0.03)]<sup>5</sup> = ' 57.04

**(ix) (A)** Value of put option = Value of call option + PV of exercise price - Stock price

= ' 19.80 + RS. 108.70 - ' 120 ; = ' 8.50

**(x) (B)** The forward margin (premium with respect to Ask price) rate :

$$= \frac{F - S}{S} \times \frac{12}{n} \times 100 = \frac{78.9650 - 78.1255}{78.1255} \times \frac{12}{6} \times 100 = 2.15\%$$

### MCO Set 26

**Answer:1 (C) Theoretical value of a right (Vt)** = (P-S) / N+1 = ' 5 where, N = 2

or, P- S = 5(2+1); or, P = 15 + S

Value of share after right (Vo) = NP + S where, Vo = ' 75

Or, 75 = (2P + S) / 3 ; Or, 2P + S = 3 x 75 ; Or, 2P + S = 225

Putting value of P in equation (ii), we get 2 P + S = 225 ; Or, 2(15 + S) + S = 225 ; Or, 30 + 3S = 225;

Or, S = (225-30) / 3 ; Or, S = 65.

**Equation (i)**

**Equation (ii)**

**Answer:2 (A)** To purchase (¥) we need to have a quote of (¥) in terms of Rs. we need only the ASK quote.

ASK (Rs. / ¥) = ASK (Rs. / £) x ASK ( £ / \$) x ASK(\$ / ¥) = 75.33 x 0.6398 x 0. 01052 = ' 0.5070 (approx.)

**Answer:3 (B)** Let , lease rental per annum be , x

' 500000 = x + x / (1+0.1) + x / (1+0.1)<sup>2</sup> + ... + x / (1+0.1)<sup>9</sup> = x + 5.759 x = 6.759 x or, x = ' 5,00,000/ 6.759 = ' 73,975.

**Answer:4 (D)** The working capital requirement is for 45 days of the weighted operating cycle plus normal cash balance= Sales per day x weighted operating cycle + cash balance requirement = '5 lac x 45 + '0.80 lac='225.80 lac

**Answer:5 (A) Expected value of call option**

<u>Expected share price (')</u>	<u>Exercise price (')</u>	<u>Call value (')</u>	<u>Probability</u>	<u>Call option value (')</u>
150	130	20	0.8	16
110	130	0	0.2	0
				16

**Answer:6 (D) Particulars**

Total issued amount (30,000 x Rs. 150)

Less : Floatation cost (Rs. 45,00,000 x 5 / 100)

Net proceeds from issue

Annual interest charge = Rs. 45,00,000 x 14 / 100 = Rs. 6,30,000

$$K_d = \frac{I(1 - t)}{NP} = \frac{6,30,000(1 - 0.40)}{42,75,000} = 8.84\%$$

**Rs.**

45,00,000

2,25,000

42,75,000

**Answer:7 (A) Make A**



Purchase cost = Rs. 4.50 million ; Equivalent annual cost =  $4.50 / 6.1446 = \text{Rs. } 0.73235$  million

**Make B**

Purchase cost = Rs. 6.00 million; Equivalent annual cost =  $6.00 / 7.6061 = 0.78884$  million

Therefore, equivalent annual cost of make A is lower than make B, **make A is suggested to purchase.**

**Answer:8 (B)**  $B_0 = B_n \times \text{PVIF}(K\%, n \text{ years})$  ;  $B_0 = '1,000 \times 0.5803 = '580.30$

Issue price will be =  $'580.30 (1 - 0.015) = '571.60$  or  $'572$

**Answer:9 (B)** Interest @ 11% p.a. for 90 days on  $'1 = 0.0271233$ ; Amount after 90 days =  $1 + 0.0271233 = 1.0271233$

Net amount received =  $'3,00,00,000 / 1.0271233 = '2,92,07,788$  say  $'2.92$  crores

**Answer:10 (C)** Retained earnings per share =  $'4$  ; EPS

=  $'4 \times 100 / 40 = '10$  ; Dividend

=  $'10 \times 60 / 100 = '6$

$$\text{Cost of equity (Ke)} = \frac{D_0(1+g)}{P_0} + g = \frac{6(1+0.10)}{55} + 0.10 = 22\%$$

**MCQ Set 27**

**Answer:**

**(i) (D)** 5 year deposit has maturity of more than 1 year. Hence it is not a security in the money market.

**(ii) (C)** As per MM approach the dividend payout ratio is 100%, i.e. there are no retained earnings.

**(iii) (B)** To know with certainty the quantum of future cash flows.

**(iv) (B)** According to Du-Pont Analysis,  $\text{ROE} = \left( \frac{\text{Net profit}}{\text{Sales}} \right) \times \left( \frac{\text{Sales}}{\text{Avg. Assets}} \right) \times \left( \frac{\text{Avg. Assets}}{\text{Avg. Equity}} \right)$

$$\frac{\text{Avg. Assets}}{\text{Avg. Equity}} = \frac{1}{(1-0.60)} = 2.50; \text{ROE} = 0.05 \times 2 \times 2.5 = 0.25 \text{ i.e. } 25\%.$$

**(v) (A)** Current Ratio less than 1 indicates use of Current Assets in funding long term liabilities.

**(vi) (D)**  $P_3 = D_4 / \text{Ke} - g = D_0(1+g)^4 / \text{Ke} - g = 3(1+0.08)^4 / 0.12 - 0.08 = 3 \times (1.360) / 0.04 = 4.08 / 0.04 = '102/-$

**(vii) (C)** According to purchase power parity, spot rate after 5 years =  $'45 \times [(1+0.08)^5 / (1+0.03)^5] = 45[1.469 / 1.159] = 45 \times 1.2675 = 57.04$ .

**(viii) (D)** The working capital requirement is for 45 days of the weighted operating cycle plus normal cash balance = Sales per day x weighted operating cycle+ cash balance requirement =  $'5 \text{ lac} \times 45 + '0.80 \text{ lac} = '225.80 \text{ lac}$ .

**(ix) (A)**  $'47.20 \times 5,00,000 = '2,36,00,000$ .

**(x) (C)** Value of put option = Value of Call option + PV of exercise price - Stock price =  $'(39.60 + 217.40 - 240) = '17$

**MCQ Set 28**

**Answer:1 (C)** Theoretical value of a right  $(V_t) = (P-S) / N+1 = \text{Rs. } 5$  ; where,  $N = 2$

or,  $P - S = 5(2+1)$  ; or,  $P = 15 + S$

**Equation (i)**

Value of share after right ( $V_0$ ) =  $NP + S$  where  $V_0 = ₹ 75$

or,  $75 = (2P + S) / 3$  ; or,  $2P + S = 3 \times 75$  ; or,  $2P + S = 225$

**Equation (ii)**

Putting value of P in equation (ii), we get  $2P + S = 225$  ; Or,  $2(15+S) + S = 225$  ; Or,  $30 + 3S = 225$

Or,  $S = (225 - 30) / 3$  ; Or,  $S = 65$ .

**Answer:2 (A)** To purchase (¥) we need to have a quote of (¥) in terms of ' we need only the ASK quote.

$ASK (Rs. / ¥) = ASK (Rs. / £) \times ASK (£ / \$) \times ASK (\$ / ¥)$  ;  $= 75.33 \times 0.6398 \times 0.01052 = ₹ 0.5070$  (approx.)

**Answer:3 (B)** Let , lease rental per annum be , x

$₹ 500000 = x + x / (1+0.1) + x / (1+0.1)^2 + \dots + x / (1+0.1)^9$

$= x + 5.759x = 6.759x$  ; Or,  $x = ₹ 500000 / 6.759 = ₹ 73975$ .

**Answer:4 (D)** The working capital requirement is for 45 days of the weighted operating cycle plus normal cash

balance = Sales per day x weighted operating cycle+ cash balance requirement = '5 lac x 45 + ' 0.80 lac = '225.80 lac

**Answer:5 (A) Expected value of call option**

<u>Expected share price (₹)</u>	<u>Exercise price (₹)</u>	<u>Call value (₹)</u>	<u>Probability</u>	<u>Call option value (₹)</u>
150	130	20	0.8	16
110	130	0	0.2	0

**Answer:6 (D) Particulars**

Total issued amount (30,000 x Rs. 150) Rs.  
45,00,000

Less : Floatation cost (Rs. 45,00,000 x 5 / 100) 2,25,000

Net proceeds from issue 42,75,000

Annual interest charge = Rs. 45,00,000 x 14 / 100 = Rs. 6,30,000

$$K_d = \frac{I(1-t)}{NP} = \frac{6,30,000(1-0.40)}{42,75,000} = 8.84\%$$

(A) Make A will be cheaper (B) Make B will be cheaper (C) Cost will be the same (D) None of the above.

**Answer:7 (A) Make A**

Purchase cost = Rs. 4.50 million ; Equivalent annual cost =  $4.50 / 6.1446 = Rs. 0.73235$  million

**Make B**

Purchase cost = Rs. 6.00 million; Equivalent annual cost =  $6.00 / 7.6061 = 0.78884$  million

Therefore, equivalent annual cost of make A is lower than make B, **make A is suggested to purchase.**

**Answer:8 (B)**  $B_0 = B_n \times PVIF (K\%, n \text{ years})$  ; Where,  $B_n = Rs. 1,000$ ;  $n = 5$  years;  $K\% = 11.5\%$  ; incentive = 0.015 ;

$B_0 = Rs. 1,000 \times 0.5803 = Rs. 580.30$  ; Issue price will be=  $Rs. 580.30 (1 - 0.015) = Rs. 571.60$  or Rs. 572

**Answer:9 (B)** Interest @ 11% p.a. for 90 days on '1 =  $0.11 \times 90 / 365 = 0.0271233$  ; Amount after 90 days =  $1 + 0.0271233 = 1.0271233$  ; Net amount received =  $₹ 3,00,00,000 / 1.0271233 = ₹ 2,92,07,788$  say ' 2.92 crores

**Answer:10 (C)** Retained earnings per share = ' 4 ;  $EPS = ₹ 4 \times 100 / 40 = ₹ 10$  ; Dividend = ' 10 x 60 / 100 = ' 6

Cost of equity (K) =  $D^0 (1 + g) / P_0 + g = 6 (1 + 0.10) / 55 + 0.10 = 0.22$  or 22%

### MCO Set 29

**Answer:**

(i) (C) Of all securities given, gilt edged securities are considered as most liquid because they are Government

bonds and have active secondary market.

(ii) (D)  $P / E \text{ Ratio} = \text{Payout Ratio} / (r-gn) ; = 0.6(1.06) / (0.14 - 0.06) = 0.636 / 0.08 = 7.95$

(iii) (A)  $(\text{Expected spot rate a year from now}) / \text{Current spot rate} = (1 + \text{Expected inflation on home country}) / (1 + \text{Expected Inflation in foreign country or Expected spot rate of US\$ a year hence}) = (Rs. 50 \times 1.06) / 1.025 = Rs. 51.71$

(iv) (B) Amount placed in call = Rs. 52 crores; Interest = 5.65% p.a. ; Amount receivable next day = Principal + Interest for a day = Rs. 52 Crores + 52 crores  $\times (1 / 365) \times (5.65 / 100) = Rs. 52,00,80,493$

(v) (A) The rate to be quoted to the importer is the Ask rate =  $(Rs. / \$) \text{ Ask} \times (\$ / N) \text{ Ask} = (Rs. / \$) \text{ Ask} \times (1 / (\text{£} / \$) \text{ Bid}) = 46.78 \times 1 / 0.5285 = Rs. 88.51/\text{£}$

(vi) (A) Security market Line simply represents the average or normal trade-off between risk and return for a group of securities where risk is measured typically in terms of the securities betas.

(vii) (B) If the RBI intends to reduce the supply of money as part of anti inflation policy, it might increase bank rate, increase Cash Reserve Ratio, increase SLR, sell Government securities in open market.

(viii) (C) Profit margin of 0.08% is to be deducted from the bid rate. That is  $46.50 \times 0.0008 = Rs. 0.04$ ; Spot bid rate =  $46.50 - 0.04 = Rs. 46.46$

(ix) (D) As per constant dividend discount model,  $P = D1 / (k-g)$ ; so,  $k - g = D1 / P$  is dividend yield.

(x)(A) When Corporate taxes are considered, the value of the firm that is levered would be equal to the value of the unlevered firm increased by the tax shield associated with debt i.e. Value of Levered Firm = Value of unlevered firm + Debt (Tax rate). Therefore, Value of M Ltd. would exceed the value of P Ltd. by only Debt (Tax rate) i.e.,  $0.4 \times 10,00,000 = Rs. 4,00,000$ .

### MCQ Set 30

#### Answer:

(i) (B) Sum of PV Factors year 2 to 4 @10% = 2.26; Discounted cash flow after tax =  $400 \times 2.26 = 904$  lacs Hence, Investment =  $904 / 2 = 452$  lacs.

(ii) (B) Nominal Cash Flow = 150 ; P.V. of nominal cash flow = Real Cash Flow =  $150 / (1.03)^2$

$$\text{P.V. of real cash flow} = \frac{150}{(1.03)^2} \times (1.1)^2$$

(iii) (D) Debt Beta is lower than equity Beta. Asset Beta is the weighted average of debt and equity and it has to be between 1.5 and debt Beta.

(iv) (C)  $P_{AB} \times S.D._A \times S.D._B = 0.4 \times 9 \times 11 = 39.6$

(v) (B) Value of the bond =  $[140 \times \text{PVIFA } 10\%, 5 \text{ year} + 1,000 \times \text{PVIF } 10\%, 5 \text{ year}] = 140 \times 3.7907 + 1,000 \times 0.6209 = 1,151.598 = 1,152$

(vi) (C) Treynor's Ratio =  $(R_p - R_f) / \text{Beta} = (13 - 10) / 0.90 = 3.33$

(vii) (A) [Forward Rate / Spot Rate] =  $[(1 + \text{domestic interest rate}) / (1 + \text{foreign interest rate})]$   
 $F / \$ 1.6 = [(1 + 0.0185) / (1 + 0.0135)] = \$1.607893$

(viii) (D)  $R_f$ , The risk free rate.

(ix) (B) Hedge Ratio = Beta of the portfolio / Beta of the index =  $0.8 / 1.0 = 0.8$

Number of contracts to be traded = Portfolio Value  $\times \frac{\text{Hedge Ratio}}{\text{Value of a future Contract}} = 10 \text{ Cr.} \times \frac{0.8}{684000} = 116.96 = 117$

(x) (C) To recover the call option premium of ' 24, the share price on the date of expiration should rise to (' 200 + 24) = ' 224.

### MCQ Set 31

#### Answer:

(i) (B) All 4 projects have positive NPV. So PI is the selection criteria. Higher the PI, greater is the return for every rupee of investment. Z has highest and W has 2nd highest PI. So, option B is selected.

(ii) (D) Investor's Profit =  $(\text{Spot Price} - \text{Strike Price} - \text{Premium}) \times \text{No of Contracts} \times \text{Lot Size} = (' 1,240 - ' 1,195 - ' 35) \times 2 \times 100 = ' 2,000$

(iii) (A) Equivalent annual cost of Make – A =  $45,00,000 \div 6.1446 = ' 7,32,350$   
Equivalent annual cost of Make – B =  $60,00,000 \div 7.6061 = ' 7,88,841$

(iv) (A) BLC Ltd. needs EURO to pay for import. BLC Ltd. will purchase EUROS. Hence bank would quote for selling =  $(' 65.57 \times 0.8057) + (0.5\% \text{ commission}) = (' 52.83 \times 1.005) = ' 53.09 / \text{EURO}$

(v) (B) Pay-back period = Cost of project / Annual cash inflow  
So, Cost of project = Annual cash inflow  $\times$  Pay-back period =  $80,000 \times 2.855 = ' 2,28,400$

(vi) (B) We know,  $\text{Beta}_p = [\text{Beta EQUITY} \times \{E / (D + E)\}] + [\text{Beta DEBT} \times \{D / (D + E)\}]$   
 $= (1.4 \times 0.75) + (0 \times 0.25) = 1.05$

Rate of return of the project =  $R_p = R_f + B_p (R_m - R_f); = 12\% + 1.05 (18\% - 12\%) ; = 12\% + 6.30\% ; = 18.30\%$

(vii) (C)  $F = S \times [(1 + r_A)^n / (1 + r_B)^n]$ ; Or,  $F(\text{Rs.} / \$) = 60.50 \times [1 + 0.08]^5 / (1 + 0.03)^5] = 60.50 \times 1.267455 = '76.68$

(viii) (C) Of all securities given, gilt edged securities are considered as most liquid because they are Government bonds and have active secondary market.

(ix) (A) Security Market Line simply represents the average or normal trade-off between risk and return for a group of securities where risk is measured typically in terms of the securities betas.

(x) (B) If the RBI intends to reduce the supply of money as part of anti-inflation policy, it might increase bank rate, increase Cash Reserve Ratio, increase SLR, sell Government securities in the open market.

### MCQ Set 32

**Answer:**

(i) (B) Strike price – price after 3 m = 25 - 30 = Rs. 5 increase. Hence gain by exercising call option is 5 x 100 shares = Rs. 500. Less premium = Rs. 200. Net gain = 500 – 200 = 300

(ii) (C) Rs./ \$ = 1 / 0.01386952 = Rs. 72.1005 ; \$ / £ = 1.3181401; Rs./ £ = 72.1005 x 1.3181401 = 95.0386

(iii) (C) This is the base rate upon which many other rates are determined. It is a medium term policy rate.

(iv) (B) -15.50 + 14.45 + 1.35 + 0.20 = + 0.50 ; Annualized return = 0.50 / 15.5 x (360 / 90) = 12.92%

(v) (A) PI = 6.50 X 5.019 / 25 = 1.305

(vi) (A) Rf = Real rate + Inflation rate ; Risk premium = Beta (Rm-Rf) ; 2.295 = 0.85 (12-Rf) = 9.3  
Real Rate of return – 9.3 – 5.1 = 4.2%

(vii) (D) P = D / (ke - g). Hence, Ke - g = D / P = Dividend Yield ratio

**(viii) (B) Expected value of call option :**

<u>Expected share price (Rs.)</u>	<u>Exercise price (Rs.)</u>	<u>Call value(Rs.)</u>	<u>Probability</u>	<u>Call option value (Rs.)</u>
150	130	20	0.8	16
110	130	0	0.2	0
				16

(ix) (C) Time Value of option = Call premium – Intrinsic Value = Rs. (265 + 12) - (Rs.270) = Rs. 7

(x) (B) A's banker will purchase \$ from A and sell in the interbank market. In the interbank market, B is a customer and hence he can sell at only 71.10 while B can purchase in the interbank market at 71.50. Hence, if B sells at 71.10, it has for itself only the margin of 0.08%. Hence it will quote to A 71.10 - 0.08% x 71.10 for purchasing the \$ from A. i.e. 71.10 - 0.0569 = 71.0431

**MCO Set 33**

**Answer:**

(i) (B) Pay-back Period = Cost of Project / Annual Cost Saving = ' 11,42,000 / 4,00,000 = 2.855 = 2 years 11 months.

(ii) (D) Coefficient of variation = Standard deviation / Expected NPV

Coefficient of variation of X=37947 / 90000 = 0.422; Coefficient of variation of Y = 44497 / 106000 = 0.420

Coefficient of variation of Z= 42163 / 100000 = 0.422; Coefficient of variation of U = 41997 / 90000 = 0.467

**U has highest risk as it has highest coefficient of variation.**

(iii) (A) The annualized premium = [(Forward rate - Spot Rate) / Spot Rate] x [12/ Forward Contract length in months]; = 65.90 - 65 / 65 x 12 / 4 = 4.2%.

(iv) (D) Time value of option is = (Option premium- Intrinsic Value of option)  
= '[20 - (380 - 350)] = '(20 - 30) = '-10; = 0 (Cannot be negative)

(v) (B) Beta of the stock of the portfolio is [(1 / 3 x 0.75) + (1 / 3 x X) + (1 / 3 x 0)] = 1 So, X = 2.25

(vi) (A) Cost of equity capital as per CAPM approach= 0.07 + 1.7 (0.12 - 0.07) = 16.3

(vii) (B) Interest Parity =  $\frac{F}{S} = \left( \frac{1+ri}{1+rU} \right)$

Rupee premium is when spot is more than forward rupee/dollar ; Forward value is less if  $ri < rU$  i.e  $rU > ri$ .

(viii) (C) Business Risk arise from known and controllable factors unique to particular security or industry. Business Risks can be eliminated by diversification of portfolio.

(ix) (B) Investments offset each other as they move in opposite direction.

(x) (D) Individual securities does not lie on Capital Market Line. A well diversified portfolio does not become risk free and would be subject to considerable variability. The real risk of a security is the market risk which cannot be eliminated.

### MCQ Set 34

Answer:

(i) (C)  $K_e = 27 / 150 \times 100 = 18\%$  ;  $K_e = DPS / 160 = 18\%$  ;  $DPS = 160 \times 18\% = '28.80$

(ii) (A) Current Ratio = Current Asset / Current Liabilities =  $300000 - X / 200000 - X = 2$  ; Or,  $(300000 - X) = 2(200000 - X)$ ; Or,  $X = 100000$

(iii) (B) If purchasing power parity holds, then the British inflations rate will be:

$1.11 / 1.09 = 1.05 / 1 + i_B$  ; Or  $i_B = \frac{1.09 \times 1.05}{1.11} - 1 = 0.031$  or 3.1%

(iv) (B) Safety Stock =  $100 \times 3 = 300$  units

Re- order level = (Normal Daily Usage x Normal Lead Time) + Safety Stock =  $(1000 \times 3) + 300 = 3300$  units

(v) (C) Beta =  $\left( \text{Beta Equity} \times \frac{E}{D+E} \right) + \left( \text{Beta Debt} \times \frac{D}{D+E} \right) = (1.2 \times 0.70) + (0 \times 0.30) = 0.84$

Required Rate of Return =  $R_f + \text{Beta} (R_m - R_f) = 10\% + 0.84 (18\% - 10\%) = 10\% + 6.72\% = 16.72\%$

(vi) (A)  $DOL = \frac{\text{Contribution}}{EBIT} = \frac{\text{Sales} - VC}{\text{Sales} - VC - \text{Fixed Cost}} = \frac{800 - 0.625(800)}{800 - 0.625(800) - 100} = 1.5$

Which is given by 1% increase in sales. Therefore, by 5% increase in sales, Change in EBIT will be by  $1.5 \times 5\% = 7.5\%$

(vii) (A) The % spread on Euro/Pound =  $\frac{1.6557 - 1.6543}{1.6543} \times 100 = 0.085\%$

(viii) (A) Market value of equity (S) =  $\frac{2,40,000 - 72,000(I)}{0.20} = 84,000$

Total value of firm (V) =  $S + D = 840000 + 720000 = 1560000$  ;  $K_o = \frac{NOI}{V} = \frac{2,40,000}{15,60,000} = 0.15385$

<b>(ix) (C)</b> Margin of Safety	= 50,00,000@40%	= '2000000
BEP Sales	= 50,00,000 - 20,00,000	= '30,00,000
Fixed cost	= BEP (s) x P / V ratio	= 30,00,000@50% = 15,00,000
Contribution	= 5000000 x 50 / 100	= 25,00,000
Profit	= 25,00,000 - 15,00,000	= '10,00,000

**(x) (i)** False ; **(ii)** True ; **(iii)** True ; **(iv)** True ; **(v)** True ; **(vi)** False ; **(vii)** True

### MCQ Set 35

**Answer:**

**(i) (A)** Market value of Equity =  $[EBIT - 1] / K_e = [36 - 5.04] Cr. / 0.125 = 30.96 / 0.125 = ' 247.68 Cr.$   
 Total value of firm (v) = 247.68 + 72.00 = 319.68 cr. So,  $K_o = EBIT / V = [36 / 319.68] \times 100 = 11.26\%$

**(ii) (C)**  $DPS = 28\% \times EPS = 28\% \times '8 = '2.24.$  So, Market value of share =  $\frac{D + \frac{r}{K}(E - D)}{K}$   
 $= [2.24 + \{0.18 / 0.10 (8 - 2.24)\}] / 0.10 = [2.240 + 10.368] / 0.10 = ' 126.08$

**(iii) (A)** Real rate =  $[(1+n) / (1 + i)] - 1 = [(1 + 0.12) / (1+ 0.05)] - 1 = 0.06667 = 6.67\%$

**(iv) (B)** Opportunity cost =  $Discount \% / [100 - Discount \%] \times [365 / (N - S)] \times 100 = 1 / 99 \times 365 / 15 \times 100$   
 $= [365 / 1485] \times 100 = 24.58 \%$

**(v) (A)**  $F = S \times [(1 + rA)^N / (1 + rB)^N]$ ; Or,  $F (Rs. / \$) = 60.50 \times [1 + 0.08]^5 / (1 + 0.03)^5 = 60.50 \times 1.267455 = ' 76.68$

**(vi) (C)** Degree of combined Leverage =  $2 \times 2.5 = 5$ ;  $DCL = \% \text{ Change in EPS} / \% \text{ change in Sales}$ ;  
 Or,  $5 = 100 \% / \% \text{ change in sales}$ ; So,  $\% \text{ change in sales} = 100 \% / 5 = 20 \%$

**(vii) (A)**  $Ask (Rs. / ¥) = Ask(Rs. / £) \times Ask (£ / \$) \times Ask (\$ / ¥) = 75.33 \times 1.565 \times 1.052 = ' 124. 02$

**(viii) (A)** The % spread in Euro / Pound =  $[1.6557 - 1.6543] / 1.6543 = 0.085\%$

**(ix) (ii)** TRUE ; **(ii)** FALSE ; **(ii)** TRUE ; **(v)** TRUE ; **(v)**TRUE; **(v)** TRUE ; **(v)** TRUE ; **(v)** TRUE ; **(ix)** FALSE.

### MCQ Set 36

**Answer:**

**(i) (B)** Market value of Debentures =  $Interest \text{ on Debenture} / Current \text{ Yield Rate} = 12 / 0.15 = '80$

**(ii) (C)** : Degree of Combined leverage =  $Change \text{ in EPS} / EPS / Change \text{ In Sales} / Sales = [(38.40 - 9.60) / 9.60] / (28,000 - 20,000) / 20,000 = 3 / 40 = 7.5$   
 $ASales/Sales (28,000 - 20,000) / 20,000 = 40$

**(iii) (A)** Average sales per day =  $'3.65 \text{ lakhs} / 365 \text{ days}$  ; Increase in Total Returns =  $'1 \text{ lakhs} @ 3days \times 15\% = '45,000.$

**(iv) (A)** TT selling rate =  $21.50 (1 - 0.00125) = '21.47 / DM$



(v) (A) Rate of return on equity fund = 24% × 0.80 = 19.2  
 Cost of debt is = 12% × 0.20 = 2.4  
 Overall rate of return Co. should earn 21.6

(vi) (D) % spread on Euro/Pound rate =  $\frac{1.6557 - 1.6543}{1.6543} \times 100 = 0.0850\%$

(vii) (A) P.V. of inflows = 6.00 × 5.019 = '30.114 lakhs  
 Profitability Index = P.V.of inflow s / P.V.of outflow s = 30.114 / 20 = 1.51

(viii) (B) P. V. of lease rentals = '18 lakhs × PVI FA (12%, 8) ; = '18 lakhs × 4.9676 ; = '89,41,680

(ix) (i) False ; (ii) True ; (iii) True ; (iv) True ; (v) False ; (vi) True; (vii) False ; (viii) True ; (ix) True

### MCQ Set 37

#### Answer:

(i) (B) ROE = [NP / Sales] × [Assets / Equity] × [Sales / Total assets]  
 = NP Ratio × Equity Multiplier × Assets Turnover Ratio.

(ii) (A) Let the amount of current liabilities paid be "x"

Thus, Current Ratio =  $\frac{CA}{CL} = \frac{900000 - X}{600000 - X} = 2$ ; 9,00,000 – x = 12,00,000 – 2x ; = 3,00,000

(iii) (A) Safety stock = 500 units × 4 = 2,000 units; Reorder level = [Normal Daily Usage × Normal lead time] + Safety stock = [(7,30,000 / 365) × (3 + 5) / 2] + 2,000 = (2,000 × 4) + 2,000 = 10,000 units.

(iv) (C) According to Baumol model,  
 Optimal size = "2TA / I = "(2 × 40 × 37,50,000) / 0.12 = 50,000

#### (v) (B) Expected value of call option

<u>Expected share price (₹)</u>	<u>Exercise price (₹)</u>	<u>Call value (₹)</u>	<u>Probability</u>	<u>Call option value (₹)</u>
150	130	20	0.8	16
110	130	0	0.2	0
				16

(vi) (D) The % spread on Cross rate between the Euro and NZ \$. Let us find out the Cross rate first.  
 SPOT (Euro / NZ \$) = (0.5020 × 1.3904) : (0.5040 × 1.3908) = 0.6980 : 0.7010.  
 So, % Spread on Euro to NZ \$ = [(0.7010 - 0.6980) / 0.6980] × 100 = 0.4298 = 0.43.

(vii) (B) We know, Bp = [Beta EQUITY × {E / (D+E)}] + [Beta DEBT × {D / (D + E)}]; = (1.4 × 0.75) + (0 × 0.25) = 1.05  
 Rate of return of the Project = Rp = Rf + Bp (Rm - Rf) = 12% + 1.05 (18% - 12%) = 12% + 6.30% = 18.30%

(viii) (B) Pay-back period = Cost of project / Annual cash inflow  
 So, Cost of project = Annual cash inflow × Pay-back period = 80,000 × 2.855 = '2,28,400

(ix) (i) False. ; (ii) True. ; (iii) True. ; (iv) False. ; (v) True. ; (vi) False. ; (vii) True. ; (viii) False. ; (ix) True.

### MCQ Set 38

## Answer

$$(i) (C) \frac{B(r-g)}{(k-g)} = \frac{60(0.12-.06)}{(0.14-0.06)} = 45$$

$$(ii) (B) \text{ Optimal Conversion size} = \sqrt{\frac{2bt}{I}} = \sqrt{\frac{2 \times 1000 \times 3000000}{0.06}} = 316228$$

Where, T= Estimated Cash requirement, b= conversion cost and I= Interest rate

(iii) (A) The price of Swedish kronas = \$ 0.14; At 10% appreciation, it will be worth = \$0.154 ;  
A dollar will buy 1 / 0.154 = 6.49351 kronas tomorrow

$$(iv) (A) FV_n = PV (1 + c / m)^{m \times n} ; = 1000(1 + 0.055 / 2)^{2 \times 2} = '1,114.62$$

(v) (C) EBIT to become zero means 100% reduction in EBIT

$$F. \text{ Leverage} = EBIT / EBT = 2700000 / 2295000 = 1.1764$$

O. Leverage = Contribution / EBIT = 3300000 / 2700000 = 1.2222 ; Combined Leverage = 1.1764 × 1.2222 = 1.438  
Sales have to drop by 100 / 1.438 = 69.54% ; New Sales will be = 7500000 × (1-0.6954) = '2284500 (approx)

$$(vi) (C) S (\$ / \text{€}) = F (\$ / \text{€}) \times (1 + r\$)^2 / (1 + r\text{€})^2 = 1.64 \times (1+2.9\%)^2 / (1 + 3.8\%)^2 = 1.6117$$

(vii) (C) To purchase ¥, we need to have a quote of ¥ in terms of Rs. We need only the 'ask' quote

$$\text{Ask (Rs. / ¥)} = \text{Ask (Rs. / \text{€})} \times \text{Ask (\text{€} / \$)} \times \text{Ask (\$ / ¥)} = 81.33 \times 0.6498 \times 0.01102 = 0.5824$$

(viii) (i) False; (ii) False; (iii) False; (iv) False; (v) True; (vi) True; (vii) True; (viii) False; (ix) False:

(ix) (i) - (C) ; (i) - (D) ; (i) - (B) ; (vii) - (A)

## MCO Set 39

### Answer:

$$(i) (D) \text{ EPS} = \frac{\text{PAT} - \text{Preference Dividend}}{\text{No. of Equity Share}} = \frac{270000 - 27000}{80000} = 3.04 ; \text{ PE Ratio} = \frac{\text{Market Price}}{\text{EPS}} = \frac{40}{3.04} = 13.16$$

$$(ii) (C) \text{ Beta} = \left( \text{Beta Equity} \times \frac{E}{D+E} \right) + \left( \text{Beta Debt} \times \frac{D}{D+E} \right) = (1.2 \times 0.70) + (0 \times 0.30) = 0.84$$

$$\text{Required Rate of Return} = R_f + \text{Beta} (R_m - R_f) = 10\% + 0.84 (18\% - 10\%) = 10\% + 6.72\% = 16.72\%$$

$$(iii) (C) \text{ DFL} = \frac{\text{EBIT}}{\text{EBIT} - \left( I + \frac{D_p}{1-t} \right)} = 150000 ; \text{ The Financial Break even point} \left( I + \frac{D_p}{1-t} \right) = 150000 \text{ (Given)}$$

$$\text{EBIT} = Q (S - V) - F = 1,00,000 (25 - 15) - 5,00,000 = ' 5,00,000 ; \text{ DFL} = \text{SL} / \text{SL} - 1.50 \text{ Lacs} = 1.43$$

$$\text{DFL} = \text{Required Change in EPS} / \text{Change in EBIT}; \text{ Or, } 1.43 = 20\% / \text{Change in EBIT}$$

$$\text{Thus, \% Change in EBIT for 20\% EPS increase} = 20\% / 1.43 = 13.99\% \text{ or } 14\%$$

(iv) (D) 11.7%

(v) (A) Margin = (Option premium × 100) + {100 × 0.20 (market value of the share)} - {100 × (Exercise price -

market price)} = (2.50 x 100) + {100 x (0.20 x 37)} - 100 x (41 - 37) = ' 590

(vi) (C) Gordon's equity capitalisation model :  $P = E (1-b) / (K-br)$ ; Or,  $43 = E (0.6) / \{0.09 - (0.4 \times 0.12)\}$  ;  
Or,  $E = 3.01$  ; Net Profit = EPS x No. of shares =  $3.01 \times 12000 = 36120$

(vii) (B) Rs. / US \$ =  $1 / 0.01962905 = ' 50.9449$  ; Now, US\$ / Euro = 1.335603  
The direct quote of e in India will be — Rs. / Euro = RS. / US \$ x US \$ / Euro = ' 50.9449 x 1.335603 = ' 68.0420

(viii) (A) As per IRPT, the 90 day forward rate on the yen should be equal to —  
= \$ 0.012067821 [(1+0.05 / 4) / (1+0.015 / 4)] = \$ 0.0124839 or \$ 0.01248

(ix) (C) Assuming in call option, the total outgo = Premium + Exercise Price = ' 200 + (' 20x100) = ' 2,200.  
After 3 months, if the shareprice is ' 2,500, the net profit = ' 2,500 - ' 2,200 = ' 300.

(ix) (i) False. (ii) True. (iii) True. (iv) True. (v) False. (vi) False. (vii) False.

### MCQ Set 40

Answer:

(i) (B) Opportunity cost = Discount % / [100 - Discount %] x 360 / N =  $2 / 98 \times 360 / 25 = 29.4 \%$

(ii) (A) Market Value of equity (S) =  $(EBIT-1) / k_e = ('10,000,-1,400,000) / 0.125$  ; = '68,800,000  
Total value of Firm(V) = S + D = '68,800,000 + '20,000,000 = '88,800,000  
Overall cost of capital (K<sub>o</sub>) =  $(EBIT-1) / V = ' 10,000,000 / '88,800,000 = 11.26\%$

(iii) (B) '102

$D + \frac{D}{k_e} = E + \frac{E}{k_e}$   
1.80 +  $\frac{6-1.80}{0.10}$  =  $E + \frac{E}{0.10}$   
Market Value of share (P) =  $E + \frac{E}{0.10} = '102$

(iv) (D) (D) Cost of goods sold =  $(4,00,000 + 1,900,000 - 500,000) = '1,800,000$  ; Inventory turnover = Rs. 1800000/450000 = 4 ; Average age of Inventory =  $365 / 4 = 91.3$  days  
Operating cycle = Average age inventory + Average Collection Period =  $91.3 + 42 = 133.3$  days

(v) (A) Financial Leverage =  $EBIT / EBT = 3 / 1$  ;  $EBIT = 3EBT$  ;  $EBIT - 200 = EBT$  ;  $EBIT = 3[EBIT - 200]$  ;  $EBIT = '300$

Operating Leverage =  $\frac{S-V}{EBIT} = \frac{4}{1}$  ;  $S - V = 4 EBIT = 4 \times 300 = 1200$  ;  $(100 - 66.67\%)S = 1200$  ;  $\therefore \text{Sales} = \frac{1200}{33\frac{1}{3}} = \text{Rs.} 3600$

(vi) (C) Re quote :  $\text{Re.} 1 = \$1 / 40 = 0.25$ . If rupee depreciates by 10%, then =  $0.025 - 0.0025 = ' 0.0225$

(vii) (A) Bid (Euro / £) = Bid (Euro / \$) x Bid (\$ / £)  
Bid rate for Euro / £ =  $1.1916 \times 1.42 = 1.6921$  ; Ask rate for Euro / £ =  $1.1925 \times 1.47 = 1.7530$  ;  
= Quote as Euro / £ =  $1.6921 / 1.7530$

(viii) (i) True ; (ii) True ; (iii) False ; (iv) True ; (v) True ; (vi) True ; (vii) True ; (viii) True ; (ix) True ;

(ix) (i) -(D) ; (ii) - C (iii) - B ; (iv)- A

### MCQ Set 41

**Answer:**

**(i) (A)** Risk per unit of NPV = S.D. / NPV ; A = 4000 / 60000 = 0.066 ; B = 0.125 ; C = 0.17 ; D = 0.16  
Hence A is chosen as least risky relative to NPV.

**(ii) (A)** Yen to be purchased with Rs. ; Rs. 75.33 to purchase 1£ ; 1.565 £ for 1 \$ ; 1.052 \$ for 100 Yen  
= 75.33 x 1.565 x 1.052 = ' 124.02

**(iii) (A)** In an option, only the premium is paid up front, which is ' 12; ' 4,410 is the strike price  
Current spot price = 4430 > 4410. Hence it is in the money.

**(iv) (C)**  $\frac{R_p - R_f}{S.D.} = \text{Sharpe Ratio} ; = 17\% - 3.5\% \times 4 = 17 - 14 = 3\%$

**(v) (B)** (Expected cash flow with risk) = [6,000 x .2 + 16,000 x .8]  
Certainty adjusted = [6,000 x .2 + 16,000 x .8] x .7 = 9,800

**(vi) (C)** Ask price diff = 76.2538 - 75.4143 = 0.8395 ;  
6 month margin = 0.8395 / 75.4143 x 100% ; Annualised = 0.8395 / 75.4143 x 100% x 2 = 2.23%

**(vii) (B)** 18 / 99% + 2% = 18.18 % + 2% = 20.18% ; [Initially, only 99% is available for investment]

**(viii) (B)** Spot price today = 370; Strike price = 400 ; = 400 x e<sup>-5% x 6 / 12</sup> ; = 390.12 ;  
Put option value = 390.12 - 370 = 20.12

**(ix) (C)** 75.50 will become (75.50) (1.08)<sup>3</sup> = 75.50 x 1.26 = 95.10  
1 \$ will become (1.03)<sup>3</sup> = 1.09 ; Expected rate = 95.10 / 1.092 = 87.08

**(x) (D)** Sys. risk of Beta<sup>2</sup> portfolio x S.D.<sup>2</sup> ; Beta = 25 / 20 = 1.25 = (1.25)<sup>2</sup> x 20 = 31.25