Paper- 14: STRATEGIC FINANCIAL MANAGEMENT

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Full Marks: 100   Time Allowed: 3 Hours

PART – I
Answer Question Number 1 which is compulsory

1. Choose the correct option among four alternative answer. (1 mark for correct choice, 1 mark for justification.)   [10×2= 20]

(i) The following information is available in respect of H Ltd: Dividend per share (D) at dividend payout ratio of 20% = ₹2. As per Gordon's model, equity capitalisation rate is 15% (at D/P ratio of 20%). If the value of each share is ₹28.57, what is the rate of return (as per Gordon's approach)?

(a) 6.66%

(b) 12%

(c) 10%

(d) 20 %

(ii) X sold one January Nifty futures contract for ₹2,69,000, on January 15. For this he had to pay an initial margin of ₹21,250 to his broker. Each Nifty futures contract is for the delivery of 200 Nifties. On January 25, the index closed at ₹1,390. How much profit/loss did he make?

(a) Profit of ₹1,110

(b) Loss of ₹9,000

(c) Loss of ₹1,110

(d) Profit of ₹9,000

(iii) From the following rates, determine ₹/Canadian $ exchange rate:

₹/US$: ₹61.5642/61.8358

Canadian $/US$: 1.0949/1.0959
(a) ₹56.4247 – ₹56.2281

(b) ₹56.2281 – ₹56.4247

(c) ₹56.4762 – ₹56.1768

(d) ₹56.1768 – ₹56.4762

(iv) Operating exposure to exchange risk is _____if the price elasticity of demand of the goods/services the firm deals in is low.

(a) More

(b) Less

(c) Equal

(d) Zero

(v) On March 1, a call option on the Nifty with a strike price of ₹1,300 is available for trading. Expiration date is 31st March. Compute 't' that is used in the BS formula.

(a) 1

(d) 0.08

(c) 0.04

(b) 0.8

(vi) What is the fair value of one month futures if the spot value of Nifty is ₹1,150. The money can be invested at 14% p.a. and Nifty gives a dividend yield of 4% p.a.

(a) ₹1,105.76

(b) ₹1,008

(c) ₹1,159

(d) ₹974.57

(vii) Spot rate of Euro in New York is US$ 1.2800 and of the Rupee is US$0.0163. What will be the price of Euro in India?

(a) ₹78.527

(b) €78.527

(c) ₹0.0208

(d) €0.0208

(viii) A is bearish about the index. Spot Nifty stands at ₹1,250. He decides to buy two three-month Nifty put option contract (each contract has a market lot of 200) with a strike price of ₹1,275 at a premium of ₹40. Three months later, the index closes at ₹1,225. Compute his pay off on the position.

(a) ₹8,000

(b) ₹4,000

(c) ₹1,315

(d) ₹2,500

(ix) The required rate of return on the stock of A Ltd. is 15% and it has paid a dividend is ₹ 2.75 for the year 2007-2008. If the stock is currently available at a price of ₹ 52, What is the implied growth rate in dividend?

(a) 10%

(b) 12.5%

(c) 3.33%

(d) 9.22%

(x) A company's quoted share price as at present is ₹ 50 (face value ₹ 10). The company pays a dividend of ₹ 5. per share and the growth rate expected was 10% p.a. You are required to calculate Company's cost of equity capital

(a) 5%

(b) 21%

(c) 25%

(d) 30%

Answer:

1. **(i)** (c) ₹28.57

Retention ratio (b) = 1 – 0.20 = 0.80 = 80%

EPS = DPS ÷ D/P ratio = ₹2/0.20 = ₹10

Rate of return (r) = ₹10/₹100 = 10%

As per Gordon model,

$$P = [E(1 - b)]/(k_e - br)$$
$$= [₹10 (1 - 0.8)/[0.15 - (0.8 × 0.1)]$$
$$= ₹2/0.07 = ₹28.57$$

(ii) (b) ₹4,000

Akbar earns on the put option contract as the closing index is lower than the strike price. His gain is (₹1,275, E – 1,225, S_1 – ₹40, P) × 400 = ₹4,000.

(iii) (a) 0.08

The time to expiration is 31 days. The 't' used in the BS is time-to-expiration measured in years. Hence, the 't' used = 31/365 = 0.08.

(iv) (b) 21%

$$P_0 = \frac{D_1}{K_e - g}$$

Cost of equity capital = K_e

$$= \frac{D_1}{P_0} + g$$

$$= (5 × 1.1) / 50 + 0.10 = 21\%$$

(v) (d) 9.22%

We are given k_e = 15%, D_0 = Rs. 2.7 and P_0 = Rs. 52

We need to find g.

We know $P_0 = \dfrac{D_1}{K - g}$

$$= \frac{D_0 (1 + g)}{K - g}$$

$$52 = \frac{2.75 (1 + g)}{0.15 - g}$$

Solving we get g = 9.22%

(vi) (c) Loss of ₹9,000

X sold one futures contract for ₹2,69,000. In a market lot of 200, this works out to be ₹1,345 per Nifty future. On the futures expiration day, the future price converges to the spot price. If the index is closed at ₹1,390, this must be the futures close price as well. Hence, he made a loss of (₹1,390 – ₹1,345) x 200 = ₹9,000

(vii) **(a)** ₹1,159

The fair value = 1,150 x [1 + (0.14 – 0.04)] x 1/12 = ₹1,159

(viii) **(b)** ₹78.527

In New York, spot rates are US $/€ = 1.2800 and US $/₹ = 0.0163

So, ₹/€ = (₹/US $) X (US $/€) = 1/0.0163 X 1.2800 = ₹78.527

So, a direct quote of the euro in India is ₹/€ 78.527

(ix) **(d)** ₹56.1768 – ₹56.4762

$(₹/Canadian \$)_{bid}$ = $(₹/US\$)_{bid}$ x $(US\$/Canadian \$)_{bid}$

= ₹61.5642 x 1/ (1.0959*) = ₹56.1768

(* since the question provides the rate in terms of Canadian $/US $, the equation warrants US$/Canadian $, the values get reversed to have denomination effect)

$(₹/Canadian \$)_{ask}$ = $(₹/US\$)_{ask}$ x $(US\$/Canadian \$)_{ask}$

= ₹61.8358 x 1/ (1.0949) = ₹56.4762

₹/Canadian exchange rate is = ₹56.1768 – ₹56.4762

(x) **(b)** Less

Operating exposure to exchange risk is less if the price elasticity of demand of the goods/services the firm deals in is low.

PART – II

Answer any five questions from question numbers 2 to 8. Each question carries 16 marks

[16×5= 80]

2. **(a) A company is trying to choose between two investment proposals Y and Z. Project Y has a standard deviation of ₹6,500 while Project Z has a standard deviation of ₹7,200. The finance manager wishes to know which investment to choose, given each of the following combinations of the expected values:**
    i.   **Project Y and Project Z both have expected net present value of ₹15,000.**
    ii. **Project Y has expected NPV of ₹18,000 while for Project Z it is ₹22,000.**
        Explain your choice. **[6]**

    (b) A company is trying to decide whether to invest in a new project. Two mutually exclusive projects are available, each requiring an investment of ₹3,00,000. Project P is expected to generate cash inflows of ₹2,00,000 per year in the next 2 years. It is estimated that the cash inflows associated with project Q would either be ₹1,80,000, or ₹2,20,000 (each with 0.5 probability of occurrence) next year. If ₹1,80,000 is received in the first year, the cash inflow for the second year is likely to be ₹1,50,000 (probability of 0.3), ₹1,80,000 (probability of 0.4) and ₹2,00,000

(probability of 0.3). In case the first year's cash inflow is ₹2,20,000, the second year's likely cash inflow would be ₹1,80,000 and ₹2,70,000 (each with 0.3 probability), and ₹2,20,000 (probability 0.4).

The firm uses a 14 per cent minimum required rate of return for deciding whether to invest in projects comparable in risk to the ones under consideration.

(i) Calculate the risk adjusted expected NPV for projects P and Q.

(ii) Identify the best and the worst possible outcomes for Q.

(iii) Which of the projects, if any, would you recommend? [10]

Answer:

2. **(a)** i. If Project Y and Project Z both have expected net present value of ₹15,000, the Finance Manager should select Project Y since its Standard Deviation is lesser than that of Project Z. The lesser the Standard Deviation represent lesser risk.

   ii. If Project Y has expected NPV of ₹18,000 while for Project Z is ₹22,000, then selection of Project will be done with the help of Coefficient of Variation.

   Coefficient of Variation = $\dfrac{\text{Standard Deviation}}{\text{Expected NPV}}$

   Project Y = $\dfrac{6,500}{18,000}$ = 0.361   Project Z = $\dfrac{7,200}{22,000}$ = 0.327

   Analysis – Investment in Project B should be chosen, since its coefficient of variation is lower.

(b) (i) Determination of expected NPV of project P

Year	CFAT	PV factor (0.14)	Total PV
1	₹ 2,00,000	0.877	₹1,75,400
2	2,00,000	0.769	1,53,800
Total present value			3,29,200
Less: PV of cash outflows			3,00,000
NPV			29,200

Determination of expected NPV of project Q						
Time 0	1	CFAT₂	NPV at 14%	Joint probability		Expected NPV

Decision Tree

(ii) The worst possible outcome is a CFAT of ₹1,80,000 (year 1) and ₹1,50,000 (year 2) with the maximum negative NPV as ₹26,790.

The best possible outcome is when NPV is maximum, ₹1,00,570. It results when CFAT in year 1 is ₹2,20,000, followed by ₹2,70,000 in year 2.

(iii) The expected NPVs are the same for both projects. However, from the point of view of risk, project A should be chosen as there is no variability of possible events.

3. (a) A mutual fund has a NAV of ₹8.50 at the beginning of the year. At the end of the year NAV increases to ₹9.10. Meanwhile fund distributes ₹0.90 as dividend and ₹0.75 as capital gains.
   i. What is the fund's return during the period held?
   ii. Assuming that the investor had 200 units and also assuming that the distributions been re-invested at an average NAV of ₹8.75, what is the difference in return? **[8]**

   (b) Mr. M on 1.7.2020, during the initial offer of some Mutual Fund invested in 10,000 units having face value of ₹10 for each unit. On 31.3.2021, the dividend operated by the MF was 10% and Mr. M found that his annualized yield was 153.33%. On 31.12.2022, 20% dividend was given. On 31.3.2023 Mr. M wants to redeem all his balance of 11,296.11 units when his annualised yield was 73.52%. What are the NAVs as on 31.3.2021, 31.12.2022 and 31.3.2023? **[8]**

Answer:

3. (a)
   i. Return for the year (all changes on a *per unit* basis):

Change in price (₹9.10 – ₹8.50) =	₹ 0.60
Dividends received	0.90
Capital gains distributions	0.75
Total return	₹ 2.25

   Holding period return $\dfrac{2.25}{8.5} = 26.47\%$

   ii. When all dividends and capital gains distributions are reinvested into additional units of the fund (₹8.75/unit):

Dividends and capital gains per unit:	₹0.90 + ₹0.75	= ₹1.65
Total received from 200 units:	₹1.65 × 200	= ₹330.00
Additional units acquired:	₹330/₹8.75	= 37.7 units
Value of 237.7 units held at end of year	= 237.7 units × ₹9.10	= ₹2,163
Price paid for 200 units at beginning of year	200 units × ₹8.50	= ₹1,700

   Thus, the holding period return would be: = (2163 – 1700)/1700 = 27.24%
   Difference in return = 27.24 – 26.47 = 0.77%

(b) 1. NAV as at 31.03.2021

Particulars	`
Annualised Yield	153.33%
Yield for 9 months [From 1.7.2000 till 31.3.2001] [153.33% x 9/12]	115%
Return for 9 months [Investment ₹ 1,00,000 x115%]	₹1,15,000
Less: Dividends at 10% of opening value [10,000 units x ₹10 x 10%]	(₹10,000)
Net Capital Appreciation	₹1,05,000
Closing NAV [Investment ₹1,00,000 +Capital Appreciation ₹1,05,000]	₹2,05,000
No. Of units outstanding	10,000
NAV per unit	₹20.50
Dividends are reinvested at ₹20.50. Therefore, Additional units purchased as at 31.3.2001. [Dividends ₹10,000/NAV p.u. ₹20.50]	487.80
Total no of units as at 31.3.2001 (after reinvestment of dividend)	10,487.80

2.NAV as at 31.12.2022

Particulars	₹
Units outstanding as at 31.12.2002	10,487.80
Face value at ₹10 (10,487.80 units x₹10p.u.)	₹1,04,878
Dividend distributed at 20% (₹1,04,878 x 20%)	₹20,975.6
No of units as at 31.03.2003 (given)	11,296.11
Less: No of units as at 31.12.2002	10,487.80
No of units issued against reinvestment of dividend	808.31
Dividends will be reissued at the NAV as at 31.12.2002. Therefore, NAV = Dividends/No of units reissued = ₹20,975.60/808.31units	₹25.95

3. NAV as at 31.03.2023

Particulars	₹
Annualised Yield as on 31.3.2003	73.52%
Yield for 33 months [From 1.7.2000 till 31.3.2003] [73.52% x 33/12]	202.18%
Return for 33 months [Investment ₹ 1,00,000 x202.18%]	₹2,02,180
Add: Opening Investment	₹1,00,000
Closing Fund Value (Dividends need not be excluded, since they are reinvested)	₹3,02,180
No. Of units outstanding as at 31.3.2003	11,296.11
NAV per unit(₹3,02,180/11,296.11 units)	₹26.75

4. **(a) MNC Limited just declared a dividend of ₹14 per share. Mr. M is planning to purchase the share of A Limited, anticipating increase in growth rate from 8% to 9%, which will continue for three years. He also expects the market price of this share to be**
   ₹360 after three years. You are required to determine:
   (i) the maximum amount Mr. M should be willing to pay for shares, if he requires a rate of return of 13% per annum,
   (ii) the maximum price Mr. M will be willing to pay for each share, if he is of the opinion that the 9% growth can be maintained indefinitely and 13% is his rate of return per annum,

(iii) the price of share at the end of three years, if 9% growth rate is achieved and assuming other conditions remaining same as in (i) above.

Calculate rupee amount up to two decimal points.

	Year-1	Year-2	Year-3
PVIF @ 9%	1.090	1.188	1.295
PVIF @ 13%	1.130	1.277	1.443
PVIF @ 13%	0.885	0.783	0.693

[8]

(b) In the context of CAPM, what is the expected return of security A if it has the following characteristics and if the following holds for the market portfolio?

Standard Deviation, security A	0.20
Standard Deviation, Market Portfolio	0.15
Expected Return, Market Portfolio	0.13
Correlation between possible returns for security \A and the market portfolio	0.80
Risk free Rate	0.07

(i) If the standard deviation for the security were higher, how would the required return be impacted?

(ii) If the correlation coefficient were less, would expected return increase?

(iii) What is the functional relationship between the required return for a security and market risk? [8]

Answer:

4. (a)

(i) Expected dividend for next 3 years.

Year 1 (D_1) ₹14.00 (1.09) = ₹15.26

Year 2 (D_2) ₹14.00 (1.09)2 = ₹16.63

Year 3 (D_3) ₹14.00 (1.09)3 = ₹18.13

Required rate of return = 13% (K_e)

Market price of share after 3 years = (P_3) = ₹360

The present value of share

$$P_0 = \frac{D_1}{(1+K_e)} + \frac{D_2}{(1+K_e)^2} + \frac{D_3}{(1+K_e)^3} + \frac{P_3}{(1+K_e)^3}$$

$$P_0 = \frac{15.26}{(1+0.13)} + \frac{16.63}{(1+0.13)^2} + \frac{18.13}{(1+0.13)^3} + \frac{360}{(1+0.13)^3}$$

P_0 = 15.26(0.885) + 16.63(0.783) + 18.13(0.693) + 360(0.693) = ₹288.57

(ii) If 9% growth rate is achieved for indefinite period, then maximum price of share Mr. B should be willing to pay is:

$P_0 = D_1/(K_e - g)$ = ₹15.26/0.13 – 0.09 = ₹381.50

(iii) Assuming that conditions mentioned above remain same, the price expected after 3 years will be:

$P_3 = D_1/K_e - g = D_3 (1.09)/(0.13 - 0.09)$ = 18.13 × 1.09/0.04 = 19.76/0.04 = ₹494

(b) We have from CAPM model, the expected return given by

$$R_x = R_f + \frac{R_m - R_x}{\sigma_m^2}(\rho_{xm}\sigma_x\sigma_m)$$

Standard Deviation, security X = σ_x	0.20
Standard Deviation, Market Portfolio = σ_m	0.15
Expected Return, Market Portfolio = R_m	0.13
Correlation between possible returns for security X and the market portfolio= ρ_{xm}	0.80
Risk free Rate = R_f	0.07

Substituting, we have the expected return as

R_x = 0.07 + 0.06/(0.15*0.15)x (0.8*0.2*0.15) = 13.4%

(i)   If σ_x were higher, the expected return would increase.

(ii) No. If ρ_{xm} were lower, the expected return would decrease.

(iii) If σ_m were higher, the expected return would decrease & if σ_m were lower, the expected return would increase.

Therefore the required return for a security is inversely proportional to market risk.

5.   **(a) The current market price of a share is ₹27. A call option on this stock is available with a strike price of ₹28 and an expiration date in four months. If the risk-free rate equals 6% and the standard deviation of the stock's return is 40%, what is the price of the call option? Assuming that the market price of the stock is ₹28, how much does the option price change in rupee terms as well as percentage terms? Answer Using Black Scholes Model.** **[8]**

(b) A portfolio manager controls ₹50 Crores in equity stock. In anticipation of a stock market decline, the decision is made to hedge the portfolio using the index futures contract with each contract of 250 units. The portfolio's beta is 1.20, and the current value of the index futures contract selected is 238.50.

 (i)   What are the number of futures contracts that should be bought or sold to ledge the portfolio?

 (ii) Suppose that when the contracts are closed out, the portfolio has fallen in value to ₹42 Crores and that the index has fallen to 215.00. Calculate the gain or loss on the combined positions (stock portfolio and futures contracts).

 (iii) What can be the reasons behind such gain or loss? **[8]**

Answer:

5.   **(a)** Using Black Scholes Model we know that the value of call is:

$$C = S\,N\,(d_1) - Xe^{-rt}\,N(d_2)$$

Where $d_1 = \dfrac{\ln\left(\dfrac{S}{X}\right) + \left(r + \dfrac{\sigma^2}{2}\right)T}{\sigma\sqrt{T}}$ and $d_2 = d_1 - \sigma\sqrt{T}$

We are given S = 27, X = 28, t = 4m, r = 6%, σ = 40%

Therefore, $d_1 = \dfrac{\ln\left(\dfrac{27}{28}\right) + \left(0.06 + \dfrac{0.4^2}{2}\right)0.33}{0.4\sqrt{0.33}}$ = 0.042

And $d_2 = d_1 - 0.4\sqrt{0.33} = -0.187$

Solving we get, C = `2.27

If the stock price (S) changes to ₹ 28, the new option price would be ₹2.81, an increase of 0.52, which is a change of 23%.

(b)

i. Portfolio value = ₹ 50 Crores
   Portfolio beta = 1.2
   Index future value = 238.50
   Each contract = 250 units

   No. of contracts to be sold = $\dfrac{50 \text{ Crores} \times 1.2}{238.5 \times 250}$ = 10,063

ii. If portfolio has fallen to ₹42 Crores and the index closes at 206.82 then the gain/loss overall is
    Loss of portfolio = ₹ 8 Crores
    Gain by selling futures = ₹ (238.50 – 206.82) × 250 × 100.62 = ₹ 7.97 Crores
    ∴ Loss overall = ₹ 3 lakh approximately

iii. The gain or loss does not set off because:
    1. Round off error (we sell standard number of contracts)
    2. The movement of underlying and movement of index future are not exact.
    3. Beta is only an approximate measure of hedge.

6. **(a) An Indian business house has decided to borrow JPY for its Tokyo subsidiary, and an Japanese multinational has made up its mind to borrow Indian rupees for its Indian subsidiary. The amount required by the two companies is the same at the current exchange rate. The companies have been quoted the following interest rates:**

	On rupee loan in India	On JPY in Japan
Indian Company	9.0%	4.0%
Japanese Company	9.5%	3.0%

Both the Indian business house and the Japanese multinational carries out their banking operations through the same multinational bank. The multinational bank comes to know of the situation faced by the two companies and plans to design a swap. As the bank will be assuming all foreign exchange risk, it plans to receive total 50 basis points per annum and also plans to make the swap equally attractive to the two companies. What will the design of the swap be? [10]

(b) An American importer has purchased goods worth GBP 15,00,000. Payments are to be made after 6 months. The spot rate of GBP is US$ 1.2800/£. The American

importer expects depreciation of the dollar against the GBP in the coming months. A New York bank gives the 6 month forward rate as US$ 1.3381/£.

If the American importer makes use of the forward rate to hedge its currency, what is its loss or profit under following circumstances?
(i) Spot price of GBP after 6 months is US$ 1.2800/£
(ii) Spot price of GBP after 6 months is US$ 1.3962/£
(iii) Spot price of GBP after 6 months is US$ 1.2000/£   [6]

Answer:

6. **(a)** On a rupee loan, the Indian company has absolute advantage of 0.5 percent and the Japanese has absolute advantage of 1.0 percent, so under the swap arrangement there will be benefit of 1.5 percent. Since the bank requires 0.5 percent, this leaves 1.0 percent benefit to be shared. So, there will be 0.5 percent gain for each, the Indian company and the Japanese Company.
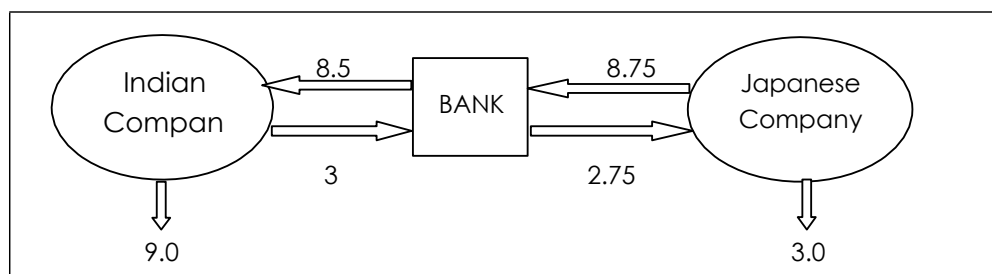
Thus swap should lead to the Indian company borrowing the ¥ at 4.0 – 0.5 = 3.5 percent and to the American company borrowing the rupee at 9.5 – 0.5 = 9.0 percent.

The interest flow can be as follows:
Here the Indian company borrows in India at 9.0 percent and lends the same to the bank at 8.5 percent, whereas the Japanese company borrows in America at 3.0 percent and lends to the bank at 2.75 percent. Simultaneously, the bank charges 8.75 percent from the Japanese company (gain is of 0.75 percent – loss of 0.25 percent, i.e., 3% - 2.75%) and 3percent from the Indian company (i.e. gain of 1% - loss of 0.5% as it borrows at 9% and lends at 8.5%). Thus, there is a gain of 0.5% to both the companies.

(b) The importer will hedge his currency rate fluctuation exposure by hedging (buying euro) in the future market; the rate to be paid by him is US$ 1.3381/£, irrespective of what the rate will be in spot market after 6 months.
   (i)   If the rate in spot market after 6 months is US$ 1.2800/£, the importer suffers a loss due to the forward contract = ($1.3381 – 1.2800) x 15,00,000 = £87,150.
   (ii) If the rate in spot market after 6 months is US$ 1.3962/£, the importer gains due to the forward contract = ($1.3962 – 1.3381) x 15,00,000 = £87,150.

(iii) If the rate in spot market after 6 months is US$ 1.2000/£, the importer suffers a loss due to the forward contract = ($1.3381 – 1.2000) x 15,00,000 = £2,07,150.

7. (a) ABC Ltd is thinking of installing a computer. It is to decide whether the computer should be acquired on lease, or be purchased through borrowings at a 12 per cent rate of interest payable at the end of the each year. Principal is due for repayment after 10 years. The following data has been collected for the purpose:

> Purchase of computer
>   Purchase price, ₹40,00,000
>   Annual maintenance, ₹50,000 (to be paid in advance every year)
>   Life of the computer, 10 years
>   Depreciation, 15 per cent per annum on written down value basis
>   Salvage value, ₹4,00,000
> Leasing of computer:
>   Initial lease payment, ₹4,00,000
>   Lease rent, ₹7,00,000 (payable in advance every year for 10 years)
>   Maintenance expenses, to be borne by the lessor.

You are required to advise ABC Ltd as to whether it should purchase the computer or acquire its services on lease basis, assuming it does not pay tax. **[6]**

(b) A textile company belongs to a risk-class for which the appropriate P/E ratio is 10. It currently has 50,000 outstanding shares selling at ₹100 each. The firm is contemplating the declaration of ₹78 dividend at the end of the current fiscal year which has just started. Given the assumption of MM, answer the following questions.

(i) What is the deference in the prices (a) if dividend is not declared, and (b) if it is declared?

(ii) Assuming that the firm pays the dividend, has a net income (y) of ₹5,00,000 and makes new investments of ₹10,00,000 during the period, how many new shares must be issued?

(iii) Prove that the value of the firm is unchanged (a) if dividend is declared, and (b) if dividend
is not declared? **[10]**

Answer:

7. (a)

PV of cash outflows under leasing alternative

Year	Payment under lease contract (₹)	PV factor (at 0.12)	Total PV (₹)
0	4,00,000	1.000	4,00,000
1-10	7,00,000	6.328*	44,29,600
			48.29,600

*6.328, that is, 5.328 (PV factor for 9 years) + 1.000 (PV factor for payment at the beginning of year 1).

PV of cash outflows under buying alternative

Particulars	Year	Amount (₹)	PV factor (at 0.12)	Total PV (₹)
Annual maintenance (advance)	1-10	50,000	6.328	3,16,400
Interest (end of the year)	1-10	4,80,000	5.650	27,12,000
Principal repayment	10	40,00,000	0.322	12,88,000
Salvage value	10	(4,00,000)	0.322	(1,28,800)
Total				41,87,600

Note: Depreciation is ignored as no tax advantage is accruing to the firm.

Recommendation: ABC Ltd is advised to buy the computer under consideration, as it is economical compared to the leasing alternative.

(b)

(i) (a) Price, P_1, when dividend is not declared

$P_0 = (D_1 + P_1)/ (1 + K_e)$

Or ₹100 = 0 + P_1/ (1+ 0.10) Or,

P_1 = ₹110

(b) When dividend is declared

$P_0 = (D_1 + P_1)/ (1 + K_e)$

Or, ₹100 = (₹8 + P_1)/0.10

= ₹102

Diference in price = 110 – 102 = ₹8

(ii) (a) Amount required for new financing

= I – (Y – nD_1)

= ₹10,00,000 – (₹5,00,000 – ₹4,00,000)

= ₹9,00,000

(b) New shares to be issued

Dn = ₹9,00,000/102

= 8,823 shares approx

(iii) (a) Value of the firm (V) when dividend is declared

V = [nD_1 + (n + Dn)P_1 – I + Y – nD_1]/(1 + K_e)

= [(₹4,00,000+ 102 × (50,000 + (₹9,00,000/102)))]– 10,00,000 + 5,00,000

– 4,00,000]/1.10

= ₹55,00,000/1.10 = ₹50,00,000.

(b) Value, when dividend is not declared

V = [(n + Δn)P_1 – I + Y]/(1 + K_e)

= [(50,000 + ₹5,00,000/110) x 110 – ₹10,00,000 + ₹5,00,000]/1.1

= [₹60,00,000 – ₹10,00,000 + ₹5,00,000]/1.10 = ₹50,00,000.

8. Write short note on (any four)   4×4=16

(a) **Identify the type of risk whether (market risk or credit risk) in each of the following independent situations:**

(i) The risk that the interest rate may fluctuate.

(ii) A business does not pay an employee's earned wages when due.

(iii) The risk of fluctuations in foreign exchange rates.

(iv) The risk that commodity prices may change adversely.

(v) A business or consumer does not pay a trade invoice when due.

(vi) A government grants bankruptcy protection to an insolvent consumer or business.

(vii) The risk that stock prices or stock indices value and/or their implied volatility may change.

(viii) An insolvent insurance company does not pay a policy obligation.

(b) What are the major segments of Money market?

(c) Difference between Hedgers and Speculators?

(d) What are the determinants of Foreign Exchange Rates?

(e) What are the similarities between the New Issue Market and the Share Market?

Answer:

8. **(a)**

(i) Market Risk

(ii) Credit Risk

(iii) Market Risk

(iv) Market Risk

(v) Credit Risk

(vi) Credit Risk

(vii) Market Risk

(viii) Credit Risk

(b) Major segments of Money Market are:

- Call/notice money market
- Treasury Bills
- Commercial Bills
- Commercial Papers
- Certificate of Deposits
- Collateralised Borrowing and Lending Obligation

(c)

	Hedger	Speculator
Long	Secure a price now to protect against future rising prices.	Secure a price now to protect against future declining prices.
Short	Secure a price now in anticipation of rising prices.	Secure a price now in anticipating of declining prices.
Examples	Producer, Farmer, Consumer-refineries, food processing companies, Importers and Exporters.	Brokerage houses, retail investors, People involved in commodity spot trading.

(d) Determinants of Foreign Exchange Rates are as follows:

1. Interest rate differentials
2. Inflation rate differentials
3. Government policies
4. Market expectations
5. Investment opportunities
6. Speculations

(e) Similarities between New Issue Market (Primary market) and share Market (secondary market) are as follows:

1) **Listing**: One aspect of inseparable connection between them is that the securities issued in primary market are invariably listed on a secondary market (recognized stock exchange) for dealings in them. The practice of listing of new issues on the stock market is of immense utility to the potential investors who can be sure that when they receive an allotment of new issues, they will subsequently be able to dispose them off any time in the stock exchange.

2) **Control**: The stock exchange exercises considerable control over the organization of new issues. The new issues of security which seek stock quotation/listing have to comply with statutory rules as well as regulations framed by the stock exchanges. If the new issues do not conform to the prescribed stipulations, the stock exchanges would refuse listing facilities to them. This requirement obviously enables the stock exchange to exercise considerable control over the new issues market and is indicative of close relationship between the two.

3) **Mutual Interdependence**: The markets for new and old securities are economically an integral part of a single market – the capital market. Their mutual interdependence has two dimensions. When value of the share increases, the volume of new issue also increases and vice-versa. The functioning of secondary market has direct influence on the activities of new issue market. If stock market performs well then it also inspires the new issue market.