

## PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

Question No.1 is compulsory.

Candidates are also required to attempt any **four** from the remaining **five** questions.

Wherever appropriate, suitable assumptions should be made and indicated in the answer by the candidate.

Working notes should form part of the respective answer.

### Question 1

- (a) A US based company is planning to set up a subsidiary company in India (where so far it was exporting) in view of growing demand for its product and competition from other US based companies. The initial project cost consisting of plant and machinery including installation is estimated to be US\$ 490 million. The net working capital requirements are estimated at US\$ 60 million. The company follows straight line method of depreciation. Currently, the company is exporting two million units every year at a unit price of US\$ 90, its variable cost per unit being US\$ 50.

The CFO of the Company has estimated the following operating cost and other data in respect of proposed project:

- (i) Variable operating cost will be US \$ 30 per unit of production;
- (ii) Additional cash fixed cost will be US \$ 30 million p.a. and project's share of allocated fixed cost will be US \$ 3 million p.a. based on principle of ability to share;
- (iii) Expected useful life of the proposed plant is five years with no salvage value;
- (iv) Production capacity of the proposed project in India will be 5 million units;
- (v) Existing working capital investment for production and sale of two million units through exports was US \$ 25 million;
- (vi) Export of the product in the coming year will decrease to 1.5 million units, provided the company does not set up subsidiary company in India, in view of the presence of competing other US based companies that are in the process of setting up their subsidiaries in India;
- (vii) Applicable Corporate Income Tax rate is 35%, and
- (viii) Required rate of return for such project is 12%.

Assuming that there will be no variation in the exchange rate of two currencies and all profits will be repatriated as there will be no withholding tax, Estimate Net Present Value of the proposed project in India and give your advice. Present Value Interest Factors (PVIF) @ 12% for five years is as below :

Year	1	2	3	4	5
PVIF	0.8929	0.7972	0.7118	0.6355	0.5674

**(8 Marks)**

(b) Following information is available for consideration:

BSE Index	25,000
Value of Portfolio	₹ 50,50,000
Risk Free Interest Rate	9% p.a.
Dividend yield on Index	6% p.a.
Beta of portfolio	1.5

We assume that a future contract on the BSE Index with 4 months maturity is used to hedge the value of portfolio over next 3 months. One future contract is for delivery of 50 times the index.

Based on the above information, calculate:

- (i) Price of future contract.  
(ii) The gain on short futures position if index turns out to be 22,500 in three months.

**(8 Marks)**

(c) State the strategy at different hierarchy levels.

**(4 Marks)****Answer**

(a) Financial Analysis whether to set up the manufacturing units in India or not may be carried using NPV technique as follows:

## I. Incremental Cash Outflows

	\$ Million
Cost of Plant and Machinery	490.00
Working Capital	60.00
Release of existing Working Capital	(25.00)
	525.00

## II. (1) Incremental Cash Inflow after Tax (CFAT) generated by investment in India for 5 years

	\$ Million
Sales Revenue (5 Million x \$90)	450.00
Less: Costs	

Variable Cost (5 Million x \$30)	150.00
Fixed Cost	30.00
Depreciation (\$490Million/5)	98.00
EBIT	172.00
Taxes @ 35%	60.20
EAT	111.80
Add: Depreciation	98.00
CFAT (1-5 years)	209.80

(2) Cash flow at the end of the 5 years (Release of Working Capital) \$35.00 Million

(3) Cash generation by exports (Opportunity Cost)

	\$ Million
Sales Revenue (1.5 Million x \$90)	135.00
Less: Variable Cost (1.5 Million x \$50)	75.00
Contribution before tax	60.00
Tax @ 35%	21.00
CFAT (1-5 years)	39.00

(4) Additional CFAT:

	\$ Million
Through setting up subsidiary in India	209.80
Through Exports in India	39.00
CFAT (1-5 years)	170.80

III. Determination of NPV

Year	CFAT (\$ Million)	PVF@12%	PV (\$ Million)
1-5	170.80	3.6048	615.6998
5	35	0.5674	19.8590
			635.5588
Less: Initial Outflow			525.0000
NPV			110.5588

**Advice:** Since NPV is positive the proposal should be accepted.

- (b) (i) Current future price of the index =  $25,000 + 25,000 (0.09 - 0.06) \frac{4}{12}$   
 =  $25,000 + 250 = ₹ 25,250$   
 $\therefore$  Price of the future contract =  $₹ 50 \times 25,250 = ₹ 12,62,500$
- (ii) Hedge ratio =  $\frac{50,50,000}{12,62,500} \times 1.50 = 6$  contracts

Index after three months turns out to be 22,500

$$\text{Future price will be} = 22,500 + 22,500 (0.09 - 0.06) \times \frac{1}{12} = 22,556.25$$

$$\begin{aligned} \text{Therefore, gain from the short futures position is} &= 6 \times (25,250 - 22,556.25) \times 50 \\ &= ₹ 8,08,125 \end{aligned}$$

*Alternative Solution: If daily compounding (exponential) formula is used.*

$$\begin{aligned} \text{Current future price of the index} &= 25,000 \times e^{(0.09-0.06) \times (4/12)} \\ &= 25,000 \times 1.010050 = 25,251.25 \\ \therefore \text{Price of the future contract} &= ₹ 50 \times 25,251.25 = ₹ 12,62,562.50 \end{aligned}$$

- (ii) Hedge ratio =  $\frac{50,50,000}{12,62,562.50} \times 1.50 = 6$  contracts

Index after three months turns out to be 22,500

$$\text{Future price will be} = 22,500 \times e^{(0.09-0.06) \times (1/12)} = 22,500 \times 1.002503 = 22,556.32$$

$$\begin{aligned} \text{Therefore, Gain from the short futures position is} &= 6 \times (25,251.25 - 22,556.32) \times 50 \\ &= ₹ 8,08,479 \end{aligned}$$

- (c) Strategies at different levels are the outcomes of different planning needs.

Three levels of Strategy – Corporate level; Business unit level; and Functional or departmental level.

- (1) **Corporate Level Strategy:** Corporate level strategy fundamentally is concerned with selection of businesses in which a company should compete and with the development and coordination of that portfolio of businesses.

Corporate level strategy should be able to answer three basic questions:

- ❖ *Suitability:* Whether the strategy would work for the accomplishment of common objective of the company.
- ❖ *Feasibility:* Determines the kind and number of resources required to formulate and implement the strategy.

❖ *Acceptability*: It is concerned with the stakeholders' satisfaction and can be financial and non-financial.

- (2) **Business Unit Level Strategy**: Strategic business unit (SBU) may be any profit centre that can be planned independently from the other business units of a corporation. At the business unit level, the strategic issues are about practical coordination of operating units and developing and sustaining a competitive advantage for the products and services that are produced.
- (3) **Functional Level Strategy**: The functional level is the level of the operating divisions and departments. The strategic issues at this level are related to functional business processes and value chain. Functional level strategies in R&D, operations, manufacturing, marketing, finance, and human resources involve the development and coordination of resources through which business unit level strategies can be executed effectively and efficiently. Functional units of an organization are involved in higher level strategies by providing input to the business unit level and corporate level strategy, such as providing information on customer feedback or on resources and capabilities on which the higher level strategies can be based. Once the higher-level strategy is developed, the functional units translate them into discrete action plans that each department or division must accomplish for the strategy to succeed.

Among the different functional activities viz production, marketing, finance, human resources and research and development, finance assumes highest importance during the top down and bottom up interaction of planning. Corporate strategy deals with deployment of resources and financial strategy is mainly concerned with mobilization and effective utilization of money, the most critical resource that a business firm likes to have under its command. Truly speaking, other resources can be easily mobilized if the firm has adequate monetary base. To go into the details of this interface between financial strategy and corporate strategy and financial planning and corporate planning let us examine the basic issues addressed under financial planning.

### Question 2

- (a) Mr. X is having a portfolio of shares worth ₹ 170 lakhs at current price and cash ₹ 30 lakhs. The beta of share portfolio is 1.6. After 3 months the price of shares dropped by 3.2%.

Determine:

- (i) Current portfolio beta.
- (ii) Portfolio beta after 3 months if Mr. X on current date goes for long position on ₹ 200 lakhs Nifty futures. **(8 Marks)**
- (b) P Ltd., a dealer quotes 'All-in-cost' for a generic swap at 6% against six months LIBOR flat. If the Notional principal amount of swap is ₹ 8,00,000:

- (i) Calculate semi-annual fixed payment.
- (ii) Find the first floating rate payment for (i) above if the six month period from the effective date of swap to the settlement date comprises 181 days and that the corresponding LIBOR was 5% on the effective date of swap. (Consider up to three decimal places).
- (iii) In question number (ii) above, if the settlement is on 'Net' basis, how much the fixed rate payer would pay to the floating rate payer?

Note: Generic swap is based on 30/360 days basis.

**(8 Marks)**

- (c) Describe the main features of Value-at-Risk (VAR).

**(4 Marks)**

**Answer**

**(a) (i) Current Portfolio Beta**

Current Beta for share portfolio = 1.6

Beta for cash = 0

Current portfolio beta =  $0.85 \times 1.6 + 0.15 \times 0 = 1.36$

**(ii) Portfolio beta after 3 months:**

Beta for portfolio of shares =  $\frac{\text{Change in value of portfolio of share}}{\text{Change in value of market portfolio (Index)}}$

$$1.6 = \frac{0.032}{\text{Change in value of market portfolio (Index)}}$$

Change in value of market portfolio (Index) =  $(0.032 / 1.6) \times 100 = 2\%$

Position taken on 200 lakh Nifty futures : Long

Value of index after 3 months = ₹ 200 lakh  $\times (1.00 - 0.02)$   
= ₹ 196 lakh

Mark-to-market paid = ₹ 4 lakh

Cash balance after payment of mark-to-market = ₹ 26 lakh

Value of portfolio after 3 months = ₹ 170 lakh  $\times (1 - 0.032) + ₹ 26$  lakh  
= ₹ 190.56 lakh

Change in value of portfolio =  $\frac{200 \text{ lakh} - 190.56 \text{ lakh}}{200 \text{ lakh}} \times 100 = 4.72\%$

Portfolio beta =  $0.0472 / 0.02 = 2.36$

**(b) (i) Semi-annual fixed payment**

$$= (N) (AIC) (\text{Period})$$

Where N = Notional Principal amount = ₹ 8,00,000

$$\text{AIC} = \text{All-in-cost} = 6\% = 0.06$$

$$= 8,00,000 \times 0.06 \left( \frac{180}{360} \right)$$

$$= 8,00,000 \times 0.06 (0.5)$$

$$= 8,00,000 \times 0.03 = ₹ 24,000$$

**(ii) Floating Rate Payment**

$$= N (\text{LIBOR}) \left( \frac{dt}{360} \right)$$

$$= 8,00,000 \times 0.05 \times \frac{181}{360}$$

$$= ₹ 8,00,000 \times 0.05 (0.503)$$

$$= ₹ 8,00,000 \times 0.02515$$

$$= ₹ 20,120$$

**(iii) Net Amount**

$$= (i) - (ii)$$

$$= ₹ 24,000 - ₹ 20,120 = ₹ 3,880$$

**(c) Following are main features of VAR:**

(i) *Components of Calculations:* VAR calculation is based on following three components:

(a) Time Period

(b) Confidence Level – Generally 95% and 99%

(c) Loss in percentage or in amount

(ii) *Statistical Method:* It is a type of statistical tool based on Standard Deviation.

(iii) *Time Horizon:* VAR can be applied for different time horizons say one day, one week, one month and so on.

- (iv) *Probability*: Assuming the values are normally attributed, probability of maximum loss can be predicted.
- (v) *Risk Control*: Risk can be controlled by setting limits for maximum loss.
- (vi) *Z Score*: Z Score indicates how many Standard Deviations is away from Mean value of a population. When it is multiplied with Standard Deviation it provides VAR.

**Question 3**

- (a) *Following financial data are available of RK Ltd., for the year ended on 31-03-2020:*

<b>Particulars</b>	<b>₹ (in Million)</b>
8% Debentures	125
10% Bonds	50
Equity Shares of ₹ 10 each	100
Reserves and Surplus	300
Total Assets	600
Assets Turnover Ratio	1.1
Effective Interest Rate	8%
Effective tax rate	40%
Operating margin	10%
Dividend pay-out ratio	16.67%
Required rate of return by investors	15%
Current market price of share	₹ 14

You are required to:

- (i) *Prepare the income statement of RK Ltd., for the year ended on 31-03-2020.*
- (ii) *Calculate the sustainable growth rate.*
- (iii) *Find out the fair price of the company's share using dividend discount model.*
- (iv) *Advice whether the share is under-priced or overpriced. (8 Marks)*
- (b) *XP Pharma Ltd., has acquired an export order for ₹ 10 million for formulations to a European company. The Company has also planned to import bulk drugs worth ₹ 5 million from a company in UK. The proceeds of exports will be realized in 3 months from now and the payments for imports will be due after 6 months from now. The invoicing of these exports and imports can be done in any currency i.e. Dollar, Euro or Pounds sterling at company's choice. The following market quotes are available.*



	<b>Spot Rate</b>	<b>Annualised Premium</b>
₹/\$	67.10/67.20	\$ - 7%
₹/Euro	63.15/63.20	Euro - 6%
₹/Pound	88.65/88.75	Pound - 5%

Advice XP Pharma Ltd. about invoicing in which currency.

(Calculation should be upto three decimal places).

**(8 Marks)**

(c) Explain Indicative Risk Matrix of each stages of funding for Venture Capital Financing.

**(4 Marks)**

**Answer**

**(a) Workings:**

Asset turnover ratio	= 1.1
Total Assets	= ₹ 600 million
Turnover ₹ 600 million × 1.1	= ₹ 660 million
Effective interest rate	= $\frac{\text{Interest}}{\text{Liabilities}} = 8\%$
Liabilities	= ₹ 125 million + ₹ 50 million = 175 million
Interest	= ₹ 175 million × 0.08 = ₹ 14 million
Operating Margin	= 10%
Hence operating cost	= (1 - 0.10) ₹ 660 million = ₹ 594 million
Dividend Payout	= 16.67%
Tax rate	= 40%

**(i) Income statement**

	(₹ Million)
Sale	660
Less: Operating Exp	<u>594</u>
EBIT	66
Less: Interest	<u>14</u>
EBT	52
Less: Tax @ 40%	<u>20.80</u>
EAT	31.20
Less: Dividend @ 16.67%	<u>5.20</u>
Retained Earnings	<u>26.00</u>

(ii)  $SGR = ROE (1-b)S$

$$ROE = \frac{PAT}{NW} \text{ and } NW = ₹ 100 \text{ million} + ₹ 300 \text{ million} = ₹ 400 \text{ million}$$

$$ROE = \frac{₹ 31.2 \text{ million}}{₹ 400 \text{ million}} \times 100 = 7.8\%$$

$$SGR = 0.078(1 - 0.1667) = 6.5\% \text{ or } \frac{0.078 \times 0.8333}{1 - 0.078 \times 0.8333} = 6.95\%$$

(iii) Calculation of fair price of share using dividend discount model

$$P_0 = \frac{D_0(1+g)}{k_e - g}$$

$$\text{Dividends} = \frac{₹ 5.2 \text{ million}}{₹ 10 \text{ million}} = ₹ 0.52 \text{ per share}$$

Growth Rate = 6.5% or 6.95%

$$\text{Hence } P_0 = \frac{0.52(1+0.065)}{0.15 - 0.065} = \frac{0.5538}{0.085} = ₹ 6.52 \text{ or } \frac{0.52(1+0.0695)}{0.15 - 0.0695} = \frac{0.5561}{0.0805} = ₹ 6.91$$

(iv) Since the current market price of share is ₹ 14, the share is overvalued. Hence the investor should not invest in the company.

(b) (i) Proceeds of Exports in INR = ₹ 10 Million

Position of Inflow under three currencies will be as follows:

Currency	Invoice at Spot Rate	Expected Rate after 3-months	Conversion in INR after 3-months
\$	₹ 100,00,000/ ₹ 67.10 = \$ 149031.297	₹ 67.10 (1 + 0.07/4) = ₹ 68.27	₹ 68.27 x \$ 149031.297 = ₹ 1,01,74,367
€	₹ 100,00,000/ ₹ 63.15 = € 1,58,353.127	₹ 63.15 (1 + 0.06/4) = ₹ 64.10	₹ 64.10 x € 1,58,353.127 = ₹ 1,01,50,435
£	₹ 100,00,000/ ₹ 88.65 = £ 1,12,803.158	₹ 88.65 (1 + 0.05/4) = ₹ 89.76	₹ 89.76 x £ 1,12,803.158 = ₹ 1,01,25,211

(ii) Payment of Import in INR = ₹ 5 Million

Position of outflow under three currencies will be as follows:

Currency	Invoice at Spot Rate	Expected Rate after 6-months	Conversion in INR after 6-months
\$	₹ 50,00,000/ ₹ 67.20 = \$ 74404.762	₹ 67.20 (1 + 0.07/2) = ₹ 69.55	₹ 69.55 x \$ 74404.762 = ₹ 51,74,851

€	₹ 50,00,000/ ₹ 63.20 = € 79,113.924	₹ 63.20 (1 + 0.06/2) = ₹ 65.10	₹ 65.10 x € 79,113.924 = ₹ 51,50,316
£	₹ 50,00,000/ ₹ 88.75 = £ 56,338.028	₹ 88.75 (1 + 0.05/2) = ₹ 90.97	₹ 90.97 x £ 56,338.028 = ₹ 51,25,070

**Advice:** Since cash inflow is highest (1,01,74,367) in case of \$ hence invoicing for Export should be in \$. However, cash outflow is least (51,25,070) in case of £ the invoicing for import should be in £.

(c) Risk in each stage is different. An indicative Risk matrix is given below:

Financial Stage	Period (Funds locked in years)	Risk Perception	Activity to be financed
Seed Money	7-10	Extreme	For supporting a concept or idea or R&D for product development and involves low level of financing.
Start Up	5-9	Very High	Initializing prototypes operations or developing products and its marketing.
First Stage	3-7	High	Started commercials production and marketing.
Second Stage	3-5	Sufficiently high	Expanding market and growing working capital need though not earning profit.
Third Stage	1-3	Medium	Market expansion, acquisition & product development for profit making company. Also called Mezzanine Financing.
Fourth Stage	1-3	Low	Facilitating public issue i.e. going public. Also called Bridge Financing.

**Question 4**

(a) Mr. K has invested in three Mutual fund schemes as per details below:

	Scheme A	Scheme B	Scheme C
Date of Investment	01-12-2018	01-01-2019	01-03-2019
Amount of Investment	₹ 5,00,000	₹ 10,00,000	₹ 5,00,000

Net Asset Value at entry date	₹ 10.50	₹ 10.00	₹ 10.00
Dividend received up to 31-03-2019	₹ 9,500	₹ 15,000	₹ 5,000
NAV as at 31-3-2019	₹ 10.40	₹ 10.10	₹ 9.80

You are required to calculate the effective yield on per annum basis in respect of each of the three schemes to Mr. K upto 31-03-2019, taking the year consisting of 365 days.

Provide a brief comment on the course of action he should take for future period.

(Calculation should be upto three decimal places)

**(8 Marks)**

(b) The data given below relates to convertible bond of Hi-Fi Ltd.:

Face value	₹ 2,500
No. of shares per bond	20
Coupon rate	12%
Market price per share	₹ 120
Market price of convertible bond	₹ 2,650
Straight value of bond	₹ 2,350

You are required to calculate the following:

- Conversion value of bond.
- The percentage of downside risk.
- The conversion premium
- Conversion parity price of the stock and also interpret the results. **(8 Marks)**

(c) Explain Pitch Presentation. List the methods for approaching a Pitch Presentation.

**(4 Marks)**

### Answer

(a) Calculation of effective yield on per annum basis in respect of three mutual fund schemes to Mr. K up to 31-03-2019:

Particulars	Scheme A	Scheme B	Scheme C
(a) Investments	₹ 5,00,000	₹ 10,00,000	₹ 5,00,000
(b) Opening NAV	₹ 10.50	₹ 10.00	₹ 10.00
(c) No. of units (a/b)	47,619.048	1,00,000	50,000
(d) Unit NAV on 31-3-2019	₹ 10.40	₹ 10.10	₹ 9.80
(e) Total NAV on 31-3-2019 (c x d)	₹ 4,95,238.099	₹ 10,10,000	₹ 4,90,000

(f) Increase / Decrease of NAV (e - a)	(₹ 4,761.901)	₹ 10,000	(₹ 10,000)
(g) Dividend Received	₹ 9,500	₹ 15,000	₹ 5,000
(h) Total yield (f + g)	₹ 4,738.099	₹ 25,000	(₹ 5,000)
(i) Number of Days	121	90	31
(j) Effective yield p.a. (h/a x 365/i x 100)	2.859%	10.139%	(-) 11.774%

**Comments:** Since the Effective Yield in Scheme C is negative and that of Scheme A is much lower than Scheme B, it is advised that Mr. K should redeem the investments in Scheme A and Scheme C and the proceeds should be invested in Scheme B in the next period.

- (b) (i) Stock value or conversion value of bond

$$120 \times 20 = ₹ 2,400$$

- (ii) Percentage of the downside risk

$$\frac{₹ 2,650 - ₹ 2,350}{₹ 2,350} = 0.1277 \text{ or } 12.77\% \text{ or } \frac{₹ 2,650 - ₹ 2,350}{₹ 2,650} = 0.1132 \text{ or } 11.32\%$$

This ratio gives the percentage price decline experienced by the bond if the stock becomes worthless.

- (iii) Conversion Premium

$$\frac{\text{Market Price} - \text{Conversion Value}}{\text{Conversion Value}} \times 100$$

$$\frac{₹ 2,650 - ₹ 2,400}{₹ 2,400} = 10.42$$

- (iv) Conversion Parity Price

$$\frac{\text{Bond Price}}{\text{No. of Shares on Conversion}}$$

$$\frac{₹ 2,650}{20} = ₹ 132.50$$

This indicates that if the price of shares rises to ₹ 132.50 from ₹ 120 the investor will neither gain nor lose on buying the bond and exercising it. Observe that ₹ 12.50 (₹ 132.50 – ₹ 120.00) is 10.42% of ₹ 120, the Conversion Premium.

- (c) **Pitch Presentation** is a short and brief presentation (not more than 20 minutes) to investors explaining about the prospects of the company and why they should invest into the startup business. So, pitch deck presentation is a brief presentation basically using PowerPoint to provide a quick overview of business plan and convincing the investors to put some money into the business. Pitch presentation can be made either during face-to-face meetings or online meetings with potential investors, customers, partners, and co-founders.

Some of the methods as how to approach a pitch presentation are as follows:

- (i) **Introduction:** Introduction of the start up and a brief account of yourself.
- (ii) **Team:** What sort of team is working with the startup and their core competence need to be highlighted.
- (iii) **Problem:** The promoter should be able to explain the problem he is going to solve and solutions emerging from it.
- (iv) **Solution:** It is very important to describe in the pitch presentation as to how the company is planning to solve the problem.
- (v) **Marketing/Sales:** This is a very important part where investors will be deeply interested. The market size of the product must be communicated to the investors. The promoter can brief the investors about the growth and forecast future revenue.
- (vi) **Projections or Milestones:** Both financial and physical projections can be made. Some projected statements may be presented like, Income Statement, Cash Flow Statement, Balance Sheet etc.
- (vii) **Competition:** Every business organization has competition even if the product or service offered is new and unique. It is necessary to highlight in the pitch presentation as to how the products or services are different from their competitors.
- (viii) **Business Model:** The term business model is a wide term denoting core aspects of a business including purpose, business process, target customers, offerings, strategies, infrastructure, organizational structures, sourcing, trading practices, and operational processes and policies including culture.
- (ix) **Financing:** If a startup business firm has raised money, it is preferable to talk about how much money has already been raised, who invested money into the business and what they did about it.

#### Question 5

- (a) *Excellent Ltd. reported a profit of ₹ 154 lakhs after 30% tax for the financial year 2019-20. An analysis of the accounts revealed that there is an extraordinary loss of ₹ 20 lakhs and the income included extraordinary items of ₹ 16 lakhs. The existing operations, except for the extraordinary items, are expected to continue in the future. In addition, the results of the launch of a new product are expected to be as follows:*

	<i>₹ in lakhs</i>
Sales	140
Material costs	40
Labour costs	24
Fixed costs	20

You are required to:

- (i) Calculate the value of the business, given that the capitalization rate is 14%.
  - (ii) Determine the market price per equity share, with Excellent Ltd.'s share capital being comprised of 2,00,000 at 13% preference shares of ₹ 100 each and 100,00,000 equity shares of ₹ 10 each and the P/E ratio being 12 times. (Ignoring Corporate Dividend Tax). **(8 Marks)**
- (b) A company has a choice of investments between several different equity oriented mutual funds. The company has an amount of ₹ 100 lakhs to invest. The details of the mutual funds are as follows:

Mutual Funds	A	B	C	D	E
Beta	1.5	1.0	0.8	2.0	0.7

**PLAN I**

If the company invests 20% of its investments in each of the first two mutual funds (A and B) and balance in equal amounts in the mutual funds C, D and E, what is the beta of the portfolio?

**PLAN II**

If the company invests 15% of its investment in C, 15% in A, 10% in E and the balance in equal amounts in the other two mutual funds, what is the beta of the portfolio?

If the expected return of market portfolio is 12% at a beta factor of 1.0, what will be the expected return on' the portfolio in both the plans given above? **(8 Marks)**

- (c) State the problems faced in growth of securitization instruments in Indian context. **(4 Marks)**

**Answer**

**(a) (i) Computation of Business Value**

	(₹ Lakhs)
Profit before tax $\frac{154}{1-0.30}$	220
Less: Extraordinary income	(16)
Add: Extraordinary losses	<u>20</u>
	224
Profit from new product	(₹ Lakhs)
Sales	140
Less: Material costs	40

Labour costs	24		
Fixed costs	<u>20</u>	(84)	<u>56</u>
			280.00
Less: Taxes @30%			<u>84.00</u>
Future Maintainable Profit after taxes			<u>196.00</u>
Relevant Capitalisation Factor			0.14
Value of Business (₹ 196/0.14)			1400

## (ii) Determination of Market Price of Equity Share

Future maintainable profits (After Tax)	₹ 1,96,00,000
Less: Preference share dividends 2,00,000 shares of ₹ 100 @ 13%	<u>₹ 26,00,000</u>
Earnings available for Equity Shareholders	<u>₹ 1,70,00,000</u>
No. of Equity Shares	1,00,00,000
Earning per share = $\frac{₹ 170,00,000}{1,00,00,000} =$	₹ 1.70
PE ratio	12
Market price per share	₹ 20.40

- (b) Plan I: Investment in A and B at 20 % each and balance in equal proportion in C, D, and E.

Mutual Fund	Proportion of Investment	Beta	Proportion × Fund beta
A	0.2	1.50	0.30
B	0.2	1.00	0.20
C	0.2	0.80	0.16
D	0.2	2.00	0.40
E	0.2	0.70	0.14
Portfolio beta			1.20

- Plan II: Investment in A at 15%, C at 15% and E at 10% and balance in equal proportion in B and D:

Mutual Fund	Proportion of Investment	Beta	Proportion × Fund beta
A	0.15	1.50	0.225
B	0.30	1.00	0.300
C	0.15	0.80	0.120
D	0.30	2.00	0.600
E	0.10	0.70	0.070
Portfolio Beta			1.315



Expected return = Market return × Portfolio Beta

Plan	Return
I	$12\% \times 1.20 = 14.40\%$
II	$12\% \times 1.315 = 15.78\%$

(c) Following are main problems faced in growth of Securitization of instruments especially in Indian context:

(1) **Stamp Duty:** Stamp Duty is one of the obstacle in India. Under Transfer of Property Act, 1882, a mortgage debt stamp duty which even goes upto 12% in some states of India and this impeded the growth of securitization in India. It should be noted that since pass through certificate does not evidence any debt only able to receivable, they are exempted from stamp duty.

Moreover, in India, recognizing the special nature of securitized instruments in some states has reduced the stamp duty on them.

(2) **Taxation:** Taxation is another area of concern in India. In the absence of any specific provision relating to securitized instruments in Income Tax Act experts' opinion differ a lot. Some are of opinion that SPV as a trustee is liable to be taxed in a representative capacity then others are of view that instead of SPV, investors will be taxed on their share of income. Clarity is also required on the issues of capital gain implications on passing payments to the investors.

(3) **Accounting:** Accounting and reporting of securitized assets in the books of originator is another area of concern. Although securitization is slated to be an off-balance sheet instrument but in true sense receivables are removed from originator's balance sheet. Problem arises especially when assets are transferred without recourse.

(4) **Lack of standardization:** Every originator following his own format for documentation and administration having lack of standardization is another obstacle in the growth of securitization.

(5) **Inadequate Debt Market:** Lack of existence of a well-developed debt market in India is another obstacle that hinders the growth of secondary market of securitized or asset backed securities.

(6) **Ineffective Foreclosure laws:** For many years efforts are on for effective foreclosure but still foreclosure laws are not supportive to lending institutions and this makes securitized instruments especially mortgaged backed securities less attractive as lenders face difficulty in transfer of property in event of default by the borrower.

**Question 6**

- (a) Long Ltd., is planning to acquire Tall Ltd., with the following data available for both the companies:

	<b>Long Ltd.</b>	<b>Tall Ltd.</b>
Expected EPS	₹ 12	₹ 5
Expected DPS	₹ 10	₹ 3
No. of Shares	30,00,000	18,00,000
Current Market Price of Share	₹ 180	₹ 50

As per an estimate Tall Ltd., is expected to have steady growth of earnings and dividends to the tune of 6% per annum. However, under the new management the growth rate is likely to be enhanced to 8% per annum without additional investment.

You are required to:

- (i) Calculate the net cost of acquisition by Long Ltd., if ₹ 60 is paid for each share of Tall Ltd.
  - (ii) If the agreed exchange ratio is one share of Long Ltd., for every three shares of Tall Ltd., in lieu of the cash acquisition as per (i) above, what will be the net cost of acquisition?
  - (iii) Calculate Gain from acquisition. **(8 Marks)**
- (b) SK Ltd., has a surplus cash of ₹ 150 lakhs and wants to distribute 30% of it to the shareholders. The company decided to buy-back shares.

The company estimates that its share price after the buy-back is likely to be 15% above the buy-back price. The number of shares outstanding at present is 15 lakhs and the current EPS is ₹ 4.

You are required to determine:

- (i) The price at which the shares can be bought-back, if the market capitalization of the company should be ₹ 400 lakhs after buy back.
  - (ii) The number of shares that can be bought-back, and
  - (iii) The impact of this buy-back on the EPS, assuming that the net income remains the same. **(8 Marks)**
- (c) Define Interest Rate Swaption. State its principal features.

OR

- Describe Tracking error. List the reasons for it. **(4 Marks)**

**Answer****(a) (i) Net cost of acquisition shall be computed as follows:**

Cash Paid for the shares of Tall Ltd. ( $\text{₹ } 60 \times 18,00,000$ )	₹ 10,80,00,000
Less: Value of Tall Ltd., as a separate entity ( $18,00,000 \times \text{₹ } 50$ )	₹ 9,00,00,000
Net Cost of acquisition of Tall Ltd.	₹ 1,80,00,000

**(ii) Net Cost of acquisition in case of exchange of shares:**

Exchange ratio = 1 share of long Ltd for every 3 shares of Tall Ltd.

Number of shares to be issued in Long Ltd. ( $18,00,000/3$ )	= 6,00,000 shares
Total no. of shares in Long Ltd. after merger ( $30,00,000 + 6,00,000$ )	= 36,00,000

Calculation of cost of Equity of Tall Ltd.	= $D_1/P_0 + g$
Growth rate under new management after acquisition	= $\text{₹ } 3/50 + 0.06 = 12\%$
Value of Merged company assuming perpetual growth	= 8%
Value of merged company ( $\text{₹ } 180 \times 30,00,000$ ) + ( $\text{₹ } 3/ (0.12 - 0.08) \times 18,00,000$ )	= ₹ 67,50,00,000
= $54,00,00,000 + (75 \times 18,00,000)$	
Value per share of merged company ( $67,50,00,000/36,00,000$ )	= ₹ 187.50 per share

Calculation of net cost of acquisition	
Gross cost of acquisition ( $6,00,000 \times 187.50$ )	11,25,00,000
Less: CMP ( $18,00,000 \times 50$ )	9,00,00,000
Net Cost of acquisition	<u>2,25,00,000</u>

Alternatively, Net Cost of Acquisition can also be computed as follows:

No. of shares issued to shareholders of Tall Ltd. in the ratio of 1:3	6,00,000
Existing price of one share of Long Ltd.	₹ 180
Value of consideration paid for acquisition of Tall Ltd.	₹ 10,80,00,000
Less: Existing Value of Tall Ltd., as a separate entity	₹ 9,00,00,000
Net Cost of acquisition of Tall Ltd.	₹ 1,80,00,000

**(iii) Calculation of gain from acquisition:**

Total Earnings of Long Ltd. ( $\text{₹ } 12 \times 30,00,000$ )	₹ 3,60,00,000
Total Earnings of Tall Ltd. ( $\text{₹ } 5 \times 18,00,000$ )	₹ 90,00,000
Combined Earnings	₹ 4,50,00,000

PE Ratio of Long Ltd. (180/12)		15
Value of Long Ltd. after acquisition		₹ 67,50,00,000
Less: Value of two companies separately		
Long Ltd. (₹ 180 x 30,00,000)	₹ 54,00,00,000	
Tall Ltd. (₹ 50 x 18,00,000)	<u>₹ 9,00,00,000</u>	₹ 63,00,00,000
Gain from Acquisition		₹ 4,50,00,000

(b) (i) Let P be the buyback price decided by SK Ltd.

Market Capitalisation after Buyback

1.15P (Original Shares – Shares Bought Back)

$$400 \text{ Lakhs} = 1.15P \left( 15 \text{ lakhs} - \frac{30\% \text{ of } 150 \text{ lakhs}}{P} \right)$$

$$400 \text{ Lakhs} = 17.25 \text{ lakhs} \times P - 45 \text{ lakhs} \times 1.15 = 17.25 \text{ lakhs} P - 51.75 \text{ lakhs}$$

$$\text{Again, } 400 \text{ Lakhs} = 17.25 \text{ lakhs} P - 51.75 \text{ lakhs}$$

$$\text{or } 17.25 \text{ lakhs} P = 400 \text{ lakhs} + 51.75 \text{ lakhs}$$

$$\text{or } P = \frac{451.75}{17.25} = ₹ 26.19 \text{ per}$$

(ii) Number of Shares to be Bought Back :

$$\frac{₹ 45 \text{ lakh}}{₹ 26.19} = 1.718 \text{ lakhs (approx.) or } 171821 \text{ share}$$

(iii) **Impact of Buy Back on the EPS:**

No. of equity shares after buy back :-

$$15 \text{ lakhs} - 1.718 \text{ lakhs} = 13.282 \text{ lakhs or } 15,00,000 - 1,71,821 = 13,28,179 \text{ shares}$$

$$\therefore \text{EPS} = \frac{4 \times 15 \text{ lakhs}}{13.282 \text{ lakhs}} = ₹ 4.52 \text{ or } \frac{4 \times 15 \text{ lakhs}}{13,28,179} = ₹ 4.52$$

Thus, EPS of SK Ltd., increases to ₹ 4.52 or increases by ₹0.52 (4.52 - 4.00)

(c) An interest rate swaption is simply an option on an interest rate swap. It gives the holder the right but not the obligation to enter into an interest rate swap at a specific date in the future, at a particular fixed rate and for a specified term.

There are two types of swaption contracts: -

- A fixed rate payer swaption (also called Call Swaption).
- A fixed rate receiver swaption (also called Put Swaption).

**Principal Features of Swaptions**

- A. A swaption is effectively an option on a forward-start IRS, where exact terms such as the fixed rate of interest, the floating reference interest rate and the tenor of the IRS are established upon conclusion of the swaption contract.
- B. A 3-month into 5-year swaption would therefore be seen as an option to enter into a 5-year IRS, 3 months from now.
- C. The 'option period' refers to the time which elapses between the transaction date and the expiry date.
- D. The swaption premium is expressed as basis points.
- E. Swaptions can be cash-settled; therefore, at expiry they are marked to market off the applicable forward curve at that time and the difference is settled in cash.

**OR**

**Tracking error** can be defined as the divergence or deviation of a fund's return from the benchmarks return it is following.

The passive fund managers closely follow or track the benchmark index. Although they design their investment strategy on the same index but often it may not exactly replicate the index return. In such situation, there is possibility of deviation between the returns.

The tracking error can be calculated on the basis of corresponding benchmark return vis a vis quarterly or monthly average NAVs.

**Reasons of Tracking Error:**

Higher the tracking error higher is the risk profile of the fund. Whether the funds outperform or underperform their benchmark indices; it clearly indicates that fund managers are not following the benchmark indices properly. In addition to the same other reasons for tracking error are as follows:

- Transaction cost
- Fees charged by AMCs
- Fund expenses
- Cash holdings
- Sampling biasness

Thus, from above it can be said that to replicate the return to any benchmark index the tracking error should be near to zero.