

**CA FINAL (NEW SCHEME)
STRATEGIC FINANCIAL MANAGEMENT
JULY 2021 EXAM PAPER – SUGGESTED ANSWERS**

Question 1(a) [8 Marks]:

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 \$ 50.

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

- a) Variable operating cost will be US \$ 30 per unit of production.
- b) 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.
- c) Expected useful life of the proposed plant is five years with no salvage value.
- d) Production capacity of the proposed project in India will be 5 million units.
- e) Existing working capital investment for production and sale of two million units through exports was US \$ 25 million.
- f) Export of the product in the coming year will decrease to 1.5 million units in case the company does not open subsidiary company in India, in view of the presence of the competing other US based companies that are in the process of setting up their subsidiaries in India.
- g) Applicable Corporate Income Tax rate is 35%, and
- h) 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

Solution

If Plant is set-up in India:

Incremental Cash Outflows

	in Mn \$
Cost of Plant and Machinery	490.00
Working Capital (60 – 25)	35.00
	525.00

Calculation of Depreciation:

$$\begin{aligned}\text{Depreciation} &= (\text{Cost of the Plant} - \text{Salvage}) / \text{Useful Life} \\ &= (490 \text{ million \$} - 0) / 5 \text{ years} \\ &= \mathbf{95 \text{ million \$}}\end{aligned}$$

Incremental Cash Inflows

<u>(A) If Plant is set-up in India</u>	
	<u>in Mn \$</u>
Annual Revenues (5 million units X 90\$ per unit)	450.00
Less:	
Variable cost (5 million units X 30\$ per unit)	150.00
Fixed Cost	30.00
Depreciation	<u>95.00</u>
EBIT	175.00
Less: Tax @ 35%	<u>61.25</u>
	113.75
Add: Depreciation	<u>95.00</u>
Cash Inflow p.a.	<u>208.75</u>

<u>(B) If Exports are continued</u>	
Annual Revenues (1.5 million units X 90\$ per unit)	135.00
Less: Variable Cost (1.5 million units X 50\$ per unit)	<u>75.00</u>
EBIT	60.00
Less: Tax @ 35%	<u>21.00</u>
Cash Inflow p.a.	<u>39.00</u>
Incremental cash inflow p.a.	169.75

Calculation of Incremental Net Present Value:

YEAR	Incremental Cash Inflows	PV of Re.1 @ 12%	PV of Cis
1	169.75	0.8929	151.5698
2	169.75	0.7972	135.3247
3	169.75	0.7118	120.8281
4	169.75	0.6355	107.8761
5	204.75*	0.5674	<u>116.1752</u>
			631.7739
Less: Incremental Cos			<u>525.0000</u>
Incremental NPV			<u>106.7739</u>

* Cash Flows for year 5 = Rs. 169.75 million + Working Capital recovery Rs. 35 million.

Suggestion: Setting up subsidiary in India results in additional NPV of Rs. 106.7739 million \$ over and above the NPV generated on exports. Hence, it is advisable for the US based company to set up subsidiary company in India.

Question 1(b) [8 Marks]:

BSE Index	25000
Value of Portfolio	Rs. 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 50 times the index. Based on the above information calculate:

- (i) Price of futures contract.
- (ii) The Gain on short futures position if index turns out to be 22500 in 3 months.

Solution

Question (i):

$$\begin{aligned}F &= S_0 \times e^{(r-y)t} = \text{Rs. } 25000 + [\text{Rs. } 25000 \times (0.09 - 0.06) \times 4/12] = \\&= \text{Rs. } 25000 + \text{Rs. } 250 \\&= \text{Rs. } 25250\end{aligned}$$

Therefore, Price of Future Contract = 50 X Rs. 25250 = **Rs. 12,62,500**

Question (ii):

Number of Nifty Future Contracts to be sold = Portfolio Beta X $\frac{\text{Value of Investment to be hedged}}{\text{Value of One Index Future Contract}}$

$$\text{Number of Contracts to be sold} = 1.5 \times \frac{\text{Rs. } 50,50,000}{\text{Rs. } 12,62,500} = 6$$

If Index value after 3 months is 22,500, the value of 1-month Index Future Contract will be:

$$\begin{aligned}F &= S_0 \times e^{(r-y)t} = \text{Rs. } 22500 + [\text{Rs. } 22,500 \times (0.09 - 0.06) \times 1/12] \\&= \text{Rs. } 22,500 + \text{Rs. } 56.25 \\&= \text{Rs. } 22,556.25\end{aligned}$$

Since, Short-position is taken in Index Future Contracts, when there is fall in the price of underlying, it results in gain.

On taking off-setting position at the end of 3 months, the profits will be:

$$(\text{Rs. } 25250 - \text{Rs. } 22,556.25) \times 50 \text{ units} \times 6 \text{ Contracts} = \text{Rs. } 8,08,125$$

Question 1(c) [4 Marks]:

State the strategy at different hierarchy levels.

Answer

Strategy is an actionable plan to achieve sustainable competitive advantage. Strategies are of different types, viz.,

- a. Corporate level strategies;
- b. Business unit level strategies; and
- c. Operational or functional level strategies.

Corporate level strategies are about what the organisation should do. They are long-term in nature and formulated occasionally. They are concerned with selection of businesses in which a business should compete and with the development and coordination of that portfolio of businesses.

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

Suitability – whether the strategy would work for the accomplishment of common objective of the company?

Feasibility – what are the kind and number of resources required to formulate and implement the strategy?

Acceptability – will the strategy be beneficial to shareholders?

Business unit level strategies are about how to achieve what the organisation wants to do. They are medium term in nature and are formulated frequently. It involves issues about practical coordination of operating units and developing & sustaining a competitive advantage for the products and services that are produced.

Operational or functional level strategies are about 'actual doing'. They are short-term in nature and highly frequent. 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 organisation are involved in higher level strategies by providing inputs 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.

Question 2(a) [8 Marks]:

Mr. X is having a portfolio of shares worth Rs. 170 lakhs at current price and cash Rs. 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 the trader on current date goes for long position on Rs. 200 lakhs Nifty futures.

Solution

Question (i):

Asset	Value (in Lakh Rs.)	Weight	Beta	Weight X Beta
Shares	170	0.85	1.6	1.36
Cash	30	0.15	0	0
	200			1.36

Question (ii):

% Change in Market X Beta = % Change in value of Investment.

Or

$$\% \text{ Change in Market} = \frac{\% \text{ Change in value of Investment}}{\beta}$$

So, if share prices are dropping by 3.2%, then fall in Market will be: $3.2\% / 1.6 = 2\%$

Long Position is held for Rs. 200 Lakh is Nifty Futures. The value of underlying (i.e., Nifty) is falling by 2%. Hence, there will be loss on Nifty Futures to the extent of Rs. 4 Lakhs.

Value of Portfolio after 3 months:

	Rs. in Lakhs
Value of Portfolio [Rs. 170 Lakhs - (3.2% of Rs. 170 Lakhs)]	164.56
Bank Overdraft [Rs. 30 Lakhs – Loss on Nifty Futures of Rs. 4 Lakhs]	26.00
	190.56

When Nifty has fallen by 2%, value of portfolio has fallen by-

$$\frac{(Rs. 200 \text{ Lakhs} - Rs. 190.56 \text{ Lakhs})}{Rs. 200 \text{ Lakhs}} \times 100 = 4.72\%$$

% Change in Market X Beta = % Change in value of Investment.

$$\text{So, Beta} = \% \text{ Change in Value of Portfolio} / \% \text{ Change in Market} \\ = 4.72\% / 2\% = 2.36$$

Question 2(b) [8 Marks]:

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 Rs. 8,00,000.

- Calculate the semi-annual fixed payment.
- 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)
- 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.

Solution

Question (i):

Interest under Fixed Leg: $Rs. 8,00,000 \times 6/100 \times 181/360 = Rs. 24,133.333$

Question (ii):

Interest under Floating Leg: $Rs. 8,00,000 \times 5/100 \times 181/360 = Rs. 20,111.111$

Question (iii):

Net Settlement: Amount payable by Fixed rate payer to Floating rate payer
= Rs. 24,133.333 – Rs. 20,111.111 = **Rs. 4,022.222**

Question 2(c) [4 Marks]:

Describe the main features of Value-at-risk (VAR)

Answer

VAR measures risk of investment. Given the normal market condition in a set of period, say, one day, it estimates how much an investment might lose. This investment can be a portfolio, capital investment or foreign exchange. VAR answers two basic questions:

- (i) What is the worst-case scenario?
- (ii) What will be the loss?

Following are the main features of VAR:

1. Components of Calculations: VAR calculation is based on three components viz., time period, confidence level and loss in percentage or in amount.
2. Statistical method: it is a type of statistical tool based on standard deviation.
3. Time Horizon: VAR can be applied for different time horizons say one day, one week, one month and so on
4. Probability: Assuming the values are normally distributed, probability of maximum loss can be predicted.
5. Control Risk: risk can be controlled by setting limits for maximum loss.
6. 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) [8 Marks]:

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

	Rs. in million
8% Debentures	125
10% Bonds	50
Equity shares of Rs. 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 of investors	15%
Current market price of share	Rs. 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, and
- (iv) Advice whether the share is under-priced or over-priced.

Solution

Question (i):

INCOME STATEMENT FOR YEAR ENDED 31-03-2020	
	Rs. in million
Sales (Revenues or Turnover): Rs. 600 million X 1.1	660.00
Less: Operating Cost (Bal. fig)	<u>594.00</u>
Operation Profits or EBIT (10% Of Sales)	66.00
Less: Interest on Debt (8% X Rs. 125 million) + (10% X Rs. 50 million)	<u>15.00</u>
Earnings Before Tax	51.00
Less: Tax @ 40%	<u>20.40</u>
Earnings After Tax	<u>30.60</u>
Number of Equity Shares (in million) [Rs. 100 million / Rs. 10 each]	10.00
Earnings per Share (Rs.)	3.06
Dividend pay-out Ratio	16.67%
Dividend per share	0.51

Note: Problem has mentioned effective rate of interest as 8%. In the absence of other information pertaining to the rate of interest, the actual rates of interest given are used for calculating 'Interest on Debt'.

Question (ii):

Sustainable growth rate (g) = br

Here,

b = Retention Ratio = 1 – Dividend pay-out Ratio = 1 – 0.1667 = 0.8333

$$\begin{aligned}
 r = \text{Return on Equity} &= \frac{\text{Profits After Tax}}{\text{Equity Shareholders' Funds}} \times 100 \\
 &= \frac{\text{Rs. 30.60 Lakhs}}{(\text{Equity Share Capital Rs. 100 Lakhs} + \text{Reserves Rs. 300 Lakhs})} \times 100 \\
 &= 7.65\%
 \end{aligned}$$

So, g = 0.8333 X 7.65% = **6.38%**

Question (iii):

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

Here,

$K_e = 15\%$

$g = 6.38\%$

$D_1 = D_0 (1+g) = \text{Rs. 0.51} (1+0.0638) = \text{Rs. 0.54}$

$$S_o, P_o = \frac{Rs. 0.54}{(0.15 - 0.0638)}$$

Therefore, $P_o = \text{Rs. 6.29}$

Question (iv):

Current market price is Rs. 14. However, the fair price (or intrinsic value) of the stock is Rs. 6.29. Hence, the stock is **over-priced**.

Question 3(b) [8 Marks]:

XP Pharma Ltd., has acquired an export order for Rs. 10 million for formulations to a European company. The company has also planned to import bulk drugs worth Rs. 5 million from a company in UK. The proceeds of exports will be realised 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:

	Spot Rate	Annualised Premium
Rs. / \$	67.10 / 67.20	\$ - 7%
Rs. / Euro	63.15 / 63.20	Euro – 6%
Rs. / Pound	88.65 / 88.75	Pound – 5%

Advice XP Pharma Ltd., about invoicing in which currency.
(Calculation should be up to three decimal places)

Solution

Step One: Estimation of Future Spot Rate:

$$\text{Annual Premium (or Discount)} = \frac{F-S}{S} \times 100 \times \frac{12}{N}$$

A. Estimation of Bid-rate after 3 months:

(Rs/\$)_{3-month-Bid-rate} will be:

$$7 = \frac{F-67.10}{67.10} \times 100 \times \frac{12}{3}$$

$$\text{So, } F = \left[7 \times \frac{3}{12} \times \frac{1}{100} \times 67.10 \right] + 67.10 = \text{Rs. 68.274}$$

(Rs/Euro)_{3-month-Bid-rate} will be:

$$6 = \frac{F-63.15}{63.15} \times 100 \times \frac{12}{3}$$

$$\text{So, } F = \left[6 \times \frac{3}{12} \times \frac{1}{100} \times 63.15 \right] + 63.15 = \text{Rs. 64.097}$$

(Rs/Pound) 3-month-Bid-rate Will be:

$$5 = \frac{F-88.65}{88.65} \times 100 \times \frac{12}{3}$$

$$\text{So, } F = \left[5 \times \frac{3}{12} \times \frac{1}{100} \times 88.65 \right] + 88.65 = \text{Rs. } 89.758$$

B. Estimation of Ask-Rate after 6 Months

(Rs/\$) 6-month-Ask-rate Will be:

$$7 = \frac{F-67.20}{67.20} \times 100 \times \frac{12}{6}$$

$$\text{So, } F = \left[7 \times \frac{6}{12} \times \frac{1}{100} \times 67.20 \right] + 67.20 = \text{Rs. } 69.552$$

(Rs/Euro) 6-month-Ask-rate Will be:

$$6 = \frac{F-63.20}{63.20} \times 100 \times \frac{12}{6}$$

$$\text{So, } F = \left[6 \times \frac{6}{12} \times \frac{1}{100} \times 63.20 \right] + 63.20 = \text{Rs. } 65.096$$

(Rs/Pound) 6-month-Ask-rate Will be:

$$5 = \frac{F-88.75}{88.75} \times 100 \times \frac{12}{6}$$

$$\text{So, } F = \left[5 \times \frac{6}{12} \times \frac{1}{100} \times 88.75 \right] + 88.75 = \text{Rs. } 90.969$$

Step Two: Calculation of Invoice Amount:

If the invoice is prepared in-	In case of Exports	In Case of Imports
Dollars	Rs. 100,00,000 / Rs. 67.10 = 1,49,031.30 \$	Rs. 50,00,000 / Rs. 67.20 = 74,404.76 \$
Euros	Rs. 100,00,000 / Rs. 63.15 = 1,58,353.13 Euros	Rs. 50,00,000 / Rs. 63.20 = 79,113.92 Euros
Pounds	Rs. 100,00,000 / Rs. 88.65 = 1,12,803.16 Pounds	Rs. 50,00,000 / Rs. 88.75 = 56,338.03 Pounds

Note: 'Spot Bid-Rate' is considered for calculating the invoice value of exports and 'Spot Ask-Rate' is considered for calculating the invoice value of imports.

Step Three: Calculation of Amount Receivable on export invoice after 3 months and Amount payable on import invoice after 6 months

	If the Invoice is prepared in		
	\$	Euros	Pounds
Export Invoice Value	149031.30	158353.13	112803.16
Estimated Bid-rate after 3 months per unit of foreign currency	68.274	64.097	89.758
Amount realisable	10174962.98	10149960.57	10124986.04

The receivables are the highest when the exports are invoiced in \$. Hence, It is advisable to invoice exports in \$.

	If the Invoice is prepared in		
	\$	Euros	Pounds
Import Invoice Value	74404.76	79113.92	56338.03
Estimated Ask-rate after 6 months per unit of foreign currency	69.552	65.096	90.969
Amount payable	5174999.87	5149999.74	5125014.25

The amount payable for imports will be relatively lower when the invoice is prepared in Pound Sterling. Hence, it is advisable to demand for invoicing the imports in Pound Sterling.

Question 3(c) [4 Marks]:

Explain Indicative Risk Matrix of each stage of funding for Venture Capital Financing.

Answer

Stages of funding for Venture Capitalists

Following are the various stages of funding by Venture Capital:

1. **Seed Money:** Low level financing needed to prove a new idea.
2. **Start-up:** Early-stage firms that need funding for expenses associated with marketing and product development.
3. **First-Round:** Early sales and manufacturing funds.
4. **Second-Round:** Working capital for early stage companies that are selling products, but not yet turning in a profit.
5. **Third-Round:** Also called Mezzanine Financing. This is expansion money only for a newly profitable company.
6. **Fourth-Round:** Also called Bridge Financing. It is intended to finance the "going Public" Process.

The risk for the venture capitalist in each stage is different. An Indicative Risk Matrix is given below:

Financial Stage	Period (Funds locked in for 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 prototype of operations or developing products and its marketing
Frist Stage	3-7	High	Started commercial 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.



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Question 4(a) [8 Marks]:

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	Rs. 5,00,000	Rs. 10,00,000	Rs. 5,00,000
Net Asset Value at entry date	Rs. 10.50	Rs. 10.00	Rs. 10.00
Dividend received up to 31.03.2019	Rs. 9,500	Rs. 15,000	Rs. 5,000
NAV as at 31.03.2019	Rs. 10.40	Rs. 10.10	Rs. 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 up to 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 up to three decimal places)

Solution

	Scheme A	Scheme B	Scheme C
Amount of Investment (Rs.)	5,00,000	10,00,000	5,00,000
NAV on entry date (Rs.)	10.50	10.00	10.00
Number of Units	47,619.05	1,00,000	50,000
Dividends received (Rs.)	9,500	15,000	5,000
Dividend per unit (Rs.)	0.1995	0.15	0.10
NAV on 31st March 2019 (Rs.)	10.40	10.10	9.80
Period of Investment (days)	121	90	31
Annualised Yield (%)	2.859%	10.139%	-11.774%

The annualised yield for each scheme is calculated using the following formula:

$$\text{Annualised Return or Yield} = \frac{D1 + CG1 + (NAV1 - NAV0)}{NAV0} \times 100 \times \frac{365 \text{ Days}}{N}$$

$$\text{Scheme A} = \frac{\text{Rs. } 0.1995 + \text{Nil} + (\text{Rs. } 10.40 - \text{Rs. } 10.50)}{\text{Rs. } 10.50} \times 100 \times \frac{365 \text{ Days}}{121} = 2.859\%$$

$$\text{Scheme B} = \frac{\text{Rs. } 0.15 + \text{Nil} + (\text{Rs. } 10.10 - \text{Rs. } 10)}{\text{Rs. } 10} \times 100 \times \frac{365 \text{ Days}}{90} = 10.139\%$$

$$\text{Scheme C} = \frac{\text{Rs. } 0.10 + \text{Nil} + (\text{Rs. } 9.80 - \text{Rs. } 10)}{\text{Rs. } 10} \times 100 \times \frac{365 \text{ Days}}{31} = -11.774\%$$

Suggestion: It is advisable for Mr. K to dispose off his investment in Scheme C and invest the same in Scheme B. He might consider doing the same for Scheme A as well.

Question 4(b) [8 Marks]:

The data given below relates to convertible bond of Hi-fi Ltd.:

Face Value	Rs. 2,500
Number of shares per bond	20
Coupon rate	12%
Market price per share	Rs. 120
Market price of convertible bond	Rs. 2,650
Straight value of bond	Rs. 2,350

You are required to calculate the following:

- (i) Conversion value of the bond.
- (ii) The percentage of downside risk.
- (iii) The conversion premium.
- (iv) Conversion parity price of the stock and also interpret the results.

Solution

Question (i):

Conversion Value = Conversion Ratio X Market Price per Share

So, Conversion Value = 20 X Rs. 120 = **Rs. 2400**

Question (ii):

Percentage of Downside Risk = $\frac{(\text{Current Market Price of Debenture} - \text{Straight Value})}{\text{Straight Value}} \times 100$

So, Percentage of Downside Risk = $\frac{(\text{Rs. 2,650} - \text{Rs. 2,350})}{\text{Rs. 2,350}} \times 100 = \mathbf{12.77\%}$

Or

Percentage of Downside Risk = $\frac{(\text{Current Market Price of Debenture} - \text{Straight Value})}{\text{Current Market Price of Debenture}} \times 100$

So, Percentage of Downside Risk = $\frac{(\text{Rs. 2,650} - \text{Rs. 2,350})}{\text{Rs. 2,650}} \times 100 = \mathbf{11.32\%}$

Question (iii):

Market Price per Debenture = Rs. 2,650

Conversion Ratio = 20

Value of Debenture per Share = Rs. 2,650 / 20 = Rs. 132.50

Market price per Share = Rs. 120

Hence, conversion premium per share = Rs. 132.50 – Rs. 120 = **(-) Rs. 12.50**

Question (iv):

Conversion Parity Price of the Stock = Market Price per Debenture / Conversion Ratio

Market Price per Debenture = Rs. 2,650

Conversion Ratio = 20

So, Conversion Parity Price of the Stock = Rs. 2,650 / 20 = **Rs. 132.50**

For ensuring that there is no loss to debenture holders on conversion (i.e., no gain to company), 20 shares must be issued per bond @ Rs. 132.50 per share.

Question 4(c) [4 Marks]:

Explain Pitch Presentation. List the methods for approaching a Pitch Presentation.

Answer

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 start-up business. So, pitch deck presentation is a brief presentation basically using Power-point 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. Here, some of the methods have been highlighted below as how to approach a pitch presentation:

- (i) **Introduction:** To start with, first step is to give a brief account of yourself, i.e., who are you? What are you doing? etc. But care should be taken to make it short and sweet. Also, use this opportunity to get your investors interested in your company. One can also talk up the most interesting facts about one's business, as well as any milestones one may have achieved.
- (ii) **Team:** The next step is to introduce the people behind the scenes. The reason is that the investors will want to know the people who are going to make the product or service successful. Moreover, the investors are not only putting money towards the idea but they are also investing in the team. Also, an attempt must be made to include the background of the promoter, and how it relates to the new company. Moreover, if possible, it can also be highlighted that the team has worked together in the past and achieved significant results.
- (iii) **Problem:** Further, the Promoter must be able to explain the problem he is going to solve and the solutions emerging from it. Further the investors should be convinced that the newly introduced product or service will solve the problem convincingly.

For instance, when Facebook was launched in 2004, it added some new features which gave it a more professional and lively look in comparison to Orkut which was there for some time. It enabled Facebook to become an instant hit among the people. Further, customer had no privacy while using Orkut. However, in Facebook you can view a person's profile only when he adds you to his list. These simple yet effective advantages that Facebook has over Orkut make it an extremely popular social networking site.

- (iv) **Solution:** It is very important to describe in the pitch presentation as to how the company is planning to solve the problem. For instance, when Flipkart first started its business in 2007, it brought the concept of e-commerce in India but when they started payment through credit card was rare. So, they introduced the system of payment on the basis of 'cash on delivery' which was later followed by other e-commerce companies in India. The second problem was the entire supply chain system. Delivering goods on time is one of the most important factors that determine the success of e-commerce company. Flipkart addressed the issue by launching their own supply chain management system to deliver orders in timely manner. These innovative techniques used by Flipkart enabled them to raise large amount of capital from the investors.
- (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. This can include profiles of target customers, but one should be prepared to answer questions about how

the promoter is planning to attract the customers. If a business is already selling goods, the promoter can also brief the investors about the growth and forecast future revenue.

- (vi) **Projections or Milestones:** It is true that it is difficult to make financial projections for a start-up concern. If an organisation doesn't have a long financial history, an educated guess can be made. Projected financial statements can be prepared which gives an organisation a brief idea about where is the business heading? It tells us whether the business will be making profit or loss.

Financial Projections include three basic documents that make up a business's financial statements:

- **Income Statement:** This projects how much money the business will generate by projecting income and expenses, such as sales, cost of goods sold, expenses and capital. For your first year in business, you'll want to create a monthly income statement. For the second year, quarterly statements will suffice. For the following years, you'll just need an annual income statement.
 - **Cash Flow Statement:** A projected cash flow statement will depict how much cash will be coming into business and out of that cash how much cash will be utilised into the business. At the end of each period (e.g., monthly, quarterly, annually), one can tally it all up to show either a profit or loss.
 - **Balance Sheet:** The Balance Sheet shows the business's overall finances including assets, liabilities and equity. Typically, one will create an annual balance sheet for one's financial projections.
- (vii) **Competition:** Every business organisation 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. If any of the competitors have been acquired, their complete details like name and organisation, acquisition prices etc., should also be highlighted.
- (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.

Further, as per Investopedia, business model is the way in which a company generates revenue and makes a profit from company operations. Analysts use the term gross profit as a way to compare the efficiency and effectiveness of a firm's business model. Gross Profit is calculated by subtracting cost of goods sold from operating revenues. A business model can be illustrated with the help of an example. There are two companies – Company A and Company B. Both the companies are engaged in the business of renting movies. Prior to the advent of internet, both the companies rent movies physically. Both the companies made Rs. 5 Crore as revenues. Cost of goods sold was Rs. 4 Crores. So, the companies made Rs. 1 Crore as gross profit. After the introduction of internet, Company A started to offer movies online instead of renting or selling it physically. This change affected the business model of Company A positively. Revenue is still Rs. 5 Crores but the significant part is that cost of goods sold is now Rs. 2 Crores only. This is because online sales lead to significant reduction of storage and distribution costs. So, the gross profit increases from 20% to 60%.

Therefore, Company A isn't making more in sales, but it figured out a way to revolutionise its business model, which greatly reduces costs. Managers at Company A have an

additional 40% more margin to play with than the managers at Company B. Managers of Company B have little room for error and they have to tread carefully.

Hence, every investor wants to get his money back. So, it's important to tell them in the pitch presentation as to how they should plan on generating revenue. It is better to show the investors a list of the various revenue streams from a business model and the timeline for each of them. Further, how to price the product and what does the competitor charge for the same or similar product shall also be highlighted. It is also beneficial to discuss the lifetime value of the customer and what should be the strategy to keep him glued to their product.

- (ix) **Financing:** If a start-up business 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. If no money has been raised till date, an explanation can be made regarding how much work has been accomplished with the help of minimum funding that the company is managed to raise.

It is true that investors like to see entrepreneurs who have invested their own money. If a promoter is pitching to raise capital he should list how much he is looking to raise and how he intends to use the funds.

Question 5(a) [8 Marks]:

Excellent Ltd., reported a profit of Rs. 154 lakhs after 30% tax for the financial year 2019-20. An analysis of the accounts revealed that there is an extraordinary loss of Rs. 20 Lakhs and the income included extraordinary items of Rs. 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:

	Rs. In Lakhs
Sales	140
Material costs	40
Labour costs	24
Fixed costs	20

You are required to:

- Calculate the value of the business, given that the capitalization rate is 14%.
- Determine the market price per equity share, with Excellent Ltd.'s share capital being comprised of 2,00,000, 13% Preference shares of Rs. 100 each and 1,00,00,000 equity shares of Rs. 10 each and the P/E ratio being 12 times. (Ignore Corporate Dividend Tax)

Solution

In the First Case [i.e., Case (i)] the Capitalisation Rate is 14%, while in the second case [i.e., Case (ii)], it is 8.33% [Inverse of PE Ratio of 12]. Therefore, the two cases given are independent situations. In each Case, the value of firm, equity and share has to be calculated separately.

Case (a)

$$\text{Value of Equity} = \frac{\text{Future Maintainable Profits}}{\text{Cost of Equity (Capitalisation Rate)}}$$

Future Maintainable Profits

	Rs. in Lakhs
Earnings After Tax	154.00
Add: Tax (Rs. 154 Lakhs X 30% / 70%)	66.00
Earnings Before Tax	220.00
Less: Extraordinary Income	16.00
	204.00
Add: Extraordinary Loss	20.00
	224.00
Add: Profits from New Product	
[Rs. 140 - Rs. 40 - Rs. 24 - Rs. 20] Lakhs	56.00
Adjust Profits Before Tax	280.00
Less: Tax @ 30%	84.00
Adjusted PAT / FMP	196.00

Capitalisation Rate is 14%.

Therefore, Value of Equity = Rs. 196 Lakhs / 14% = **Rs. 1400 Lakhs.**

Since, the company does not have funds from any other sources, the Value of Business is same as Value of Equity.

Case (b)

Value of Equity = Future Maintainable Profits X $\frac{P}{E}$ Ratio

Future Maintainable Profits

	Rs. in Lakhs
Earnings After Tax	154.00
Add: Tax (Rs. 154 X 30% / 70%)	66.00
Earnings Before Tax	220.00
Less: Extraordinary Income	16.00
	204.00
Add: Extraordinary Loss	20.00
	224.00
Add: Profits from New Product	
[Rs. 70 - Rs. 20 - Rs. 12 - Rs. 10] Lakhs	56.00
Adjust Profits Before Tax	280.00
Less: Tax @ 30%	84.00
Adjusted PAT	196.00
Less: Preference Dividends (2,00,000 Shares X Rs. 100 X 13%)	26.00
Future Maintainable Profits	170.00

So, Value of Equity = Rs. 170 Lakhs X 12 = Rs. 2,040 Lakhs

Number of Equity Shares = 100 Lakhs

Therefore, Value per share = Rs. 2,040 Lakhs / 100 Lakhs = **Rs. 20.40**

Question 5(b) [8 Marks]:

A company has a choice of investments between several different equity oriented mutual funds. The company has an amount of Rs. 100 Lakhs to invest. The details of the mutual funds are as follows:

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

PLAN I

If the company invests 20% of its investment in each of the first two mutual funds (A and B) and balance in equal amount 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 beta factor of 1.0, what will be the expected return on the portfolio in both the plans given above?

Solution

Plan I:

Mutual Fund	Weight	Beta	W x Beta
A	0.20	1.50	0.30
B	0.20	1.00	0.20
C	0.20	0.80	0.16
D	0.20	2.00	0.40
E	0.20	0.70	0.14
Portfolio Beta			1.20

Question (b):

Mutual Fund	Weight	Beta	W x 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

Question (c):

$$R_{CAPM} = R_f + \beta(R_m - R_f)$$

Since, information regarding R_f is not available, it is assumed as Zero.

Plan I: Expected Return = $0 + 1.20 (12 - 0) = 14.40\%$

Plan II: Expected Return = $0 + 1.315 (12 - 0) = 15.78\%$

Question 5(c) [4 Marks]:

State the problems faced in growth of securitisation instruments in Indian context.

Answer

Following are the main problems in growth of securitization of instruments especially in Indian context:

1. Stamp Duty is one of the obstacles in India. Under Transfer of Property Act, 1882, a mortgage debt stamp duty which even goes up to 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, they are exempted from stamp duty.
2. Taxation is another area of concern in India. In the absence of any specific provision relating to securitized instruments in Income Tax, experts' opinion differs a lot. Some are of the opinion that in SPV as a trustee is liable to be taxed in a representative capacity, others are of the view that instead of SPV, investors have to be taxed on their share of income. Clarity is also required on the issue of capital gain implications on passing payments to the Investors.
3. Accounting and reporting of securitized assets in the books of the originator is another area of concern. Although securitization is slated to be an off-balance sheet instrument, in true sense, receivables are removed from Originator's balance sheet. Problem arises especially when assets are transferred without recourse.
4. Every originator follows own format for documentation. Lack of standardization is another obstacle in the growth of securitization.
5. 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. For last many years efforts are going on for effective foreclosure but still foreclosure laws are not supportive to lending institutions and this makes securitized instruments especially mortgage-backed securities less attractive as lenders face difficulty in transfer of property in the event of default by the borrower.

Question 6(a) [8 Marks]:

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

	Long Ltd.	Tall Ltd.
Expected EPS	Rs. 12	Rs. 5
Expected DPS	Rs. 10	Rs. 3
No. of Shares	30,00,000	18,00,000
Current Market Price per share	Rs. 180	Rs. 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 Rs. 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.

Solution

Pre-merger

	Long Ltd.	Tall Ltd.
No. of Shares	30,00,000	18,00,000
Current Market Price per share	Rs. 180	Rs. 50
Market Value or Market Capitalisation	Rs. 54,00,00,000	Rs. 9,00,00,000

Post-merger

The growth rate in earnings and dividends of Tall Ltd., will increase from 6% to 8% when it is acquired by Long Ltd.,

The Market Price per share of Tall Ltd., at present is Rs. 50.

Since, Dividend information is available, it can be assumed that 'Dividend Growth Model' for stock valuation is applicable.

According to Dividend Growth Model, the 'value of a share' is calculated as below:

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

P_0 = Current Market Price per share = Rs. 50.00

D_1 = Expected Dividend per Share = Rs. 3.00

g = 6%

$$\text{So, Rs. 50} = \frac{\text{Rs. 3.00}}{K_e - 0.06}$$

$$\text{So, } K_e = \frac{\text{Rs. 3.00}}{\text{Rs. 50.00}} + 0.06 = 0.06 + 0.06 = 0.12 = 12\%$$

Assuming that K_e would remain unchanged, if the growth rate is expected to rise to 8%, then the value of the share would be-

$$P_0 = \frac{\text{Rs. 3.00}}{0.12 - 0.08} = \frac{\text{Rs. 3.00}}{0.04} = \text{Rs. 75.00}$$

Then,

	Long Ltd.	Tall Ltd.
No. of Shares	30,00,000	18,00,000
Current Market Price per share	Rs. 180	Rs. 75
Market Value or Market Capitalisation	Rs. 54,00,00,000	Rs. 13,50,00,000

Value of Combined Entity will be: Rs. 54,00,00,000 + Rs. 13,50,00,000 = **Rs. 67,50,00,000**

$$\text{Benefit or Synergy} = V_{AT} - (V_A + V_T)$$

V_{AT} = Value of Combined Entity = Rs. 67,50,00,000

V_A = Pre-merger Value of Acquiring Firm = Rs. 54,00,00,000

V_T = Pre-merger Value of Target Firm = Rs. 9,00,00,000

$$\begin{aligned}\text{Benefit or Synergy from Merger} &= \text{Rs. } 67,50,00,000 - (\text{Rs. } 54,00,00,000 + \text{Rs. } 9,00,00,000) \\ &= \text{Rs. } 4,50,00,000\end{aligned}$$

Question (i):

When the consideration is settled in cash, the 'cost of acquisition' to the Acquiring Firm (i.e., Long Ltd.) is-

$$\text{Cost} = \text{Cash Compensation} (-) V_T$$

In this case,

Cash Compensation = 18,00,000 Shares X Rs. 60 per Share = Rs. 10,80,00,000

V_T = Pre-merger Value of Target Firm (i.e., Tall Ltd.) = Rs. 9,00,00,000

$$\text{So, Cost of Acquisition} = \text{Rs. } 10,80,00,000 - \text{Rs. } 9,00,00,000 = \text{Rs. } 1,80,00,000$$

Question (ii):

In this case, the consideration is in the form of 1 share of Long Ltd., for every 3 shares of Tall Ltd.

So, Long Ltd., will issue $18,00,000 / 3 = 6,00,000$ Shares to Shareholders of Tall Ltd in lieu of 18,00,000 Shares held by them.

Total No. of Shares with Long Ltd., after merger will be: $30,00,000 + 6,00,000 = \text{Rs. } 36,00,000$

In the merged entity,

Shareholders of Long Ltd., will have a stake of **83.33%** $\left(\frac{30,00,000 \text{ Shares}}{36,00,000 \text{ Share}}\right)$ or **5/6**

Shareholders of Tall Ltd., will have a stake of **16.67%** $\left(\frac{6,00,000 \text{ Shares}}{36,00,000 \text{ Share}}\right)$ or **1/6**

When the consideration is settled by issuing Shares of Acquiring Firm, the 'cost of acquisition' to the Acquiring Firm (i.e., Long Ltd.) is-

$$\text{Cost} = \alpha V_{AT} - V_T$$

Where,

α = Stake held by Shareholders of Target Firm in merged entity = $1/6$

V_{AT} = Value of Combined Entity = Rs. 67,50,00,000

V_T = Pre-merger value of Target Firm = Rs. 9,00,00,000

$$\begin{aligned}\text{So, Cost of Acquisition} &= (1/6 \times \text{Rs. } 67,50,00,000) - \text{Rs. } 9,00,00,000 \\ &= \text{Rs. } 11,25,00,000 - \text{Rs. } 9,00,00,000 \\ &= \text{Rs. } 2,25,00,000\end{aligned}$$

Question (iii):

For Shareholders of Acquiring Firm (Long Ltd.)

Gain = Synergy (or Benefit) from Merger (-) Cost of Acquisition

When Consideration is settled in cash:

$$\text{Gain} = \text{Rs. } 4,50,00,000 - \text{Rs. } 1,80,00,000 = \text{Rs. } 2,70,00,000$$

When Consideration is settled in Shares of Acquiring Firm:

$$\text{Gain} = \text{Rs. } 4,50,00,000 - \text{Rs. } 2,25,00,000 = \text{Rs. } 2,25,00,000$$

For Shareholders of Target Firm (Tall Ltd.)

Gain to Shareholders of Target Firm = Cost of Acquisition to Acquiring Firm.

So,

When consideration is settled in cash, Gain = **Rs. 1,80,00,000**

When consideration is settled in the form of Shares, Gain = **Rs. 2,25,00,000**

Note:

In solving this problem, it is assumed that the 'estimated DPS' is independent of growth rate.

If the estimated DPS of Tall Ltd., is **assumed** to be based on the present growth rate of 6%, the revised DPS for next year must be calculated as follows:

$$\frac{\text{Rs. } 3.00}{1.06} \times 1.08 = \text{Rs. } 3.06$$

Then, the revised value of Tall Ltd., the value of Synergy, the cost of acquisition and Net Benefit will change.

Question 6(b) [8 Marks]:

SK Ltd., has a surplus cash of Rs. 150 lakhs and wants to distribute 30% of it to the shareholders. The company decides to buy-back shares. The company estimates that its share price after buy-back is likely to be 15% above the buyback price. The number of shares outstanding at present is 15 lakhs and the current EPS is Rs. 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 Rs. 400 lakhs after buyback.
- (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.

Solution

Question (i):

Number of shares outstanding at present: 15 Lakhs

Funds available for buy-back = Rs. 45 Lakhs (i.e., 30% of Rs. 150 Lakhs)

Let the buy-back price be 'x'.

Then, Number of shares that can be repurchased = $\frac{\text{Rs. 45 Lakhs}}{x}$

Price of the shares after buy-back is likely to be 15% above the buy-back price.

So, post buy-back price per share will be **1.15x**

Market Capitalisation = Number of Shares X Market Price per Share

The Market Capitalisation after buy-back must be Rs. 400 Lakhs.

So, $\left[15 \text{ Lakh Shares} - \frac{\text{Rs. 45 Lakhs}}{x}\right] \times 1.15x = \text{Rs. 400 Lakhs}$

That is,

$$\left[\frac{15 \text{ Lakh } x - \text{Rs. 45 Lakhs}}{x}\right] \times 1.15x = \text{Rs. 400 Lakhs}$$

$$17.25x - 51.75 = 400 \text{ [in Lakhs]}$$

$$17.25x = 400 + 51.75 = 451.75$$

$$\text{So, } x = \text{Rs. 451.75 Lakhs} / 17.25 \text{ Lakhs} = \text{Rs. 26.19}$$

So, the price at which equity shares can be repurchased is **Rs. 26.19**

Question (ii):

$$\begin{aligned} \text{Number of Shares that can be repurchased} &= \frac{\text{Rs. 45,00,000}}{x} = \frac{\text{Rs. 45,00,000}}{\text{Rs. 26.19}} \\ &= \mathbf{1,71,821 \text{ Shares}} \end{aligned}$$

Question (iii):

Post Buy-back EPS = Post buy-back PAT / Post buy-back Number of Shares

$$\begin{aligned} \text{Present PAT} &= \text{Total Number of Shares} \times \text{Present EPS} \\ &= 15,00,000 \text{ Shares} \times \text{Rs. 4} = \text{Rs. 60 Lakhs} \end{aligned}$$

Since net income remains unchanged, the post buy-back PAT = Rs. 60 Lakhs

$$\text{Post buy-back Number of Shares} = (15,00,000 - 1,71,821) = \mathbf{13,28,179}$$

$$\text{So, Post buy-back EPS} = \frac{\text{Rs. 60,00,000}}{\text{Rs. 13,28,179 Shares}} = \mathbf{Rs. 4.52}$$

There will be an increase in EPS by **13%** [i.e., $\frac{\text{Rs. 4.52} - \text{Rs. 4.00}}{\text{Rs. 4.00}} \times 100$]

Question 6(c) – Option (i) [4 Marks]:

Define Interest Rate Swaption. State its principal features.

Answer

An Interest Rate Swaption is simply an Option contract on a Interest Rate Swap. It gives the holder a right to enter but not the obligation to enter into an interest rate swap at a specific date in 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) gives the owner of the Swaption, right but not the obligation to enter into a swap in which they pay the fixed leg and receive the floating leg.
- A **Fixed Rate Received Swaption** (also called Put Swaption) gives the owner of the Swaption, right but not the obligation to enter into a swap in which they pay the floating leg and received the fixed leg.

The principal features of Swaption are:

- (a) A Swaption is effectively an option on a forward-start Interest Rate Swap, where exact terms such as the fixed rate of interest, the floating reference interest rate and the tenor of the Interest Rate Swap are established upon conclusion of the swaption contract.
- (b) A 3-month to 5-year swaption would therefore be seen as an option to enter into a 5-year Interest Rate Swap, 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, they are marked to the market off the applicable forward curve at that time and the difference is settled in cash.

Question 6(c) – Option (ii) [4 Marks]:

Describe Tracking Error. List the reasons for it.

Answer

Tracking Error can be defined as the divergence or deviation of a fund's return from the benchmark 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 a possibility of deviation between the returns.

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

The Tracking Error is calculated as follows:

$$TE = \sqrt{\frac{\sum (d - \bar{d})^2}{n - 1}}$$

where,

d = Differential return

$\bar{d}$ = Average differential return

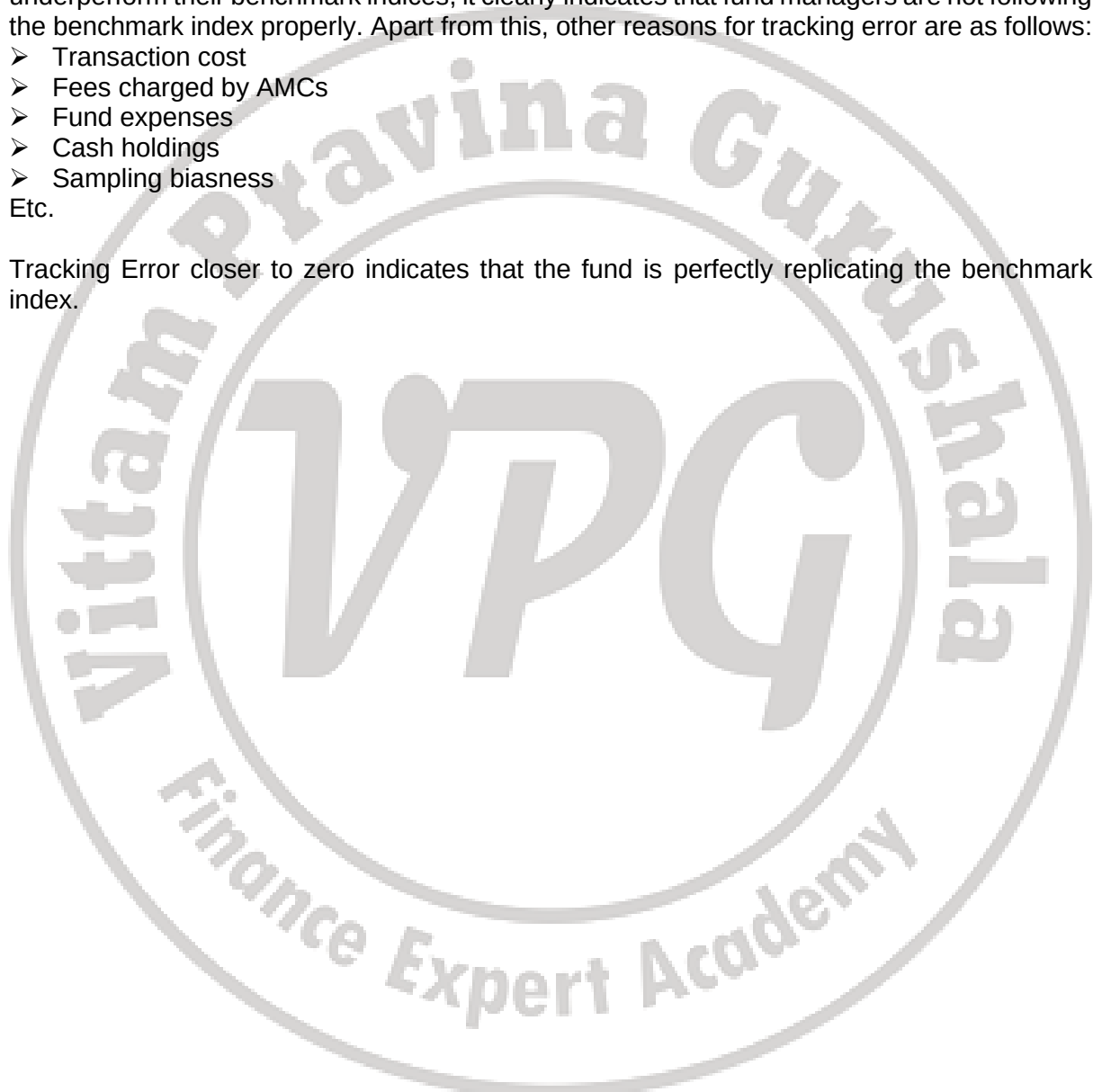
n = Number of observations

Higher the tracking error, higher 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 index properly. Apart from this, other reasons for tracking error are as follows:

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

Etc.

Tracking Error closer to zero indicates that the fund is perfectly replicating the benchmark index.



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