

**MOCK TEST PAPER**  
**FINAL (NEW) COURSE: GROUP – I**  
**PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT**  
**SUGGESTED ANSWERS/HINTS**

1. (a) (i) The given swap arrangement is Plain Vanilla Overnight Index Swap (OIS).  
(ii) To compute the Net Settlement amount we shall compute Interest as per floating rate as follows:

Day	Principal (₹)	MIBOR (%)	Interest (₹)
Tuesday	10,00,00,000	8.15	22,329
Wednesday	10,00,22,329	7.98	21,868
Thursday	10,00,44,197	7.95	21,790
Friday	10,00,65,987	8.12	22,261
Saturday & Sunday (*)	10,00,88,248	8.15	44,697
Monday	10,01,32,945	7.75	<u>21,261</u>
Total Interest @ Floating Rate (A)			<u>1,54,206</u>
Total Interest @ Fixed Rate (B)			1,53,425
$10,00,00,000 \times 8.00\% \times \frac{7}{365}$			
Net Settlement Amount Paid			781

(b) Sharpe Ratio  $S = (R_p - R_f)/\sigma_p$

Treynor Ratio  $T = (R_p - R_f)/\beta_p$

Where,

$R_p$  = Return on Fund

$R_f$  = Risk-free rate

$\sigma_p$  = Standard deviation of Fund

$\beta_p$  = Beta of Fund

Reward to Variability (Sharpe Ratio)

Mutual Fund	$R_p$	$R_f$	$R_p - R_f$	$\sigma_p$	Reward to Variability	Ranking
A	15	6	9	7	1.286	2
B	18	6	12	10	1.200	3
C	14	6	8	5	1.600	1
D	12	6	6	6	1.000	5
E	16	6	10	9	1.110	4

### Reward to Volatility (Treynor Ratio)

Mutual Fund	$R_p$	$R_f$	$R_p - R_f$	$\beta_p$	Reward to Volatility	Ranking
A	15	6	9	1.25	7.20	2
B	18	6	12	0.75	16.00	1
C	14	6	8	1.40	5.71	5
D	12	6	6	0.98	6.12	4
E	16	6	10	1.50	6.67	3

(c) The various types of problems faced in International Capital Budgeting analysis are as follows:

- (1) Multinational companies investing elsewhere are subjected to foreign exchange risk in the sense that currency appreciates/ depreciates over a span of time. To include foreign exchange risk in the cash flow estimates of any project, it is necessary to forecast the inflation rate in the host country during the lifetime of the project. Adjustments for inflation are made in the cash flows depicted in local currency. The cash flows are converted in parent country's currency at the spot exchange rate multiplied by the expected depreciation rate obtained from purchasing power parity.
- (2) Due to restrictions imposed on transfer of profits, depreciation charges and technical differences exist between project cash flows and cash flows obtained by the parent organization. Such restriction can be diluted by the application of techniques viz internal transfer prices, overhead payments. Adjustment for blocked funds depends on its opportunity cost, a vital issue in capital budgeting process.
- (3) In multinational capital budgeting, after tax cash flows need to be considered for project evaluation. The presence of two tax regimes along with other factors such as remittances to the parent firm in the form of royalties, dividends, management fees etc., tax provisions with held in the host country, presence of tax treaties, tax discrimination pursued by the host country between transfer of realized profits vis-à-vis local re-investment of such profits cause serious impediments to multinational capital budgeting process. MNCs are in a position to reduce overall tax burden through the system of transfer pricing.

For computation of actual after tax cash flows accruing to the parent firm, higher of home/ host country tax rate is used. If the project becomes feasible then it is acceptable under a more favourable tax regime. If not feasible, then, other tax saving aspects need to be incorporated in order to find out whether the project crosses the hurdle rate.

### 2. (a) Exchange Position:

Particulars	Purchases (GBP)	Sales (GBP)
Opening Balance Overbought	1,00,000	
Bill on London	1,60,000	
Forward Sales – TT		1,20,000
Cancellation of Forward Contract		60,000
TT Sales		1,50,000
Draft on London cancelled	60,000	—
	3,20,000	3,30,000
Closing Balance Oversold	10,000	—
	3,30,000	3,30,000

**Cash Position (Nostro A/c)**

	Credit	Debit
Opening balance credit	2,00,000	—
TT sales	—	1,50,000
	2,00,000	1,50,000
Closing balance (credit)	—	50,000
	2,00,000	2,00,000

The Bank has to buy spot TT GBP 15,000 to increase the balance in Nostro account to GBP 65,000.

This would bring the overbought position on GBP to 5,000.

Since the bank requires an oversold position of GBP 20,000, it has to sell forward GBP 25,000.

$$\begin{aligned}
 \text{(b) Value of share at present} &= \frac{D_1}{k_e - g} \\
 &= \frac{2(1.06)}{0.08 - 0.06} = ₹ 106
 \end{aligned}$$

However, if the Board implement its decision, no dividend would be payable for 3 years and the dividend for year 4 would be ₹ 2.50 and growing at 7% p.a. The price of the share, in this case, now would be:

$$P_0 = \frac{2.50}{0.08 - 0.07} \times \frac{1}{(1 + 0.08)^3} = ₹ 198.46$$

So, the price of the share is expected to increase from ₹ 106 to ₹ 198.45 after the announcement of the project. The investor can take up this situation as follows:

Expected market price after 3 years	$= \frac{2.50}{0.08 - 0.07}$	₹ 250.00
Expected market price after 2 years	$\frac{2.50}{0.08 - 0.07} \times \frac{1}{(1 + 0.08)}$	₹ 231.48
Expected market price after 1 years	$\frac{2.50}{0.08 - 0.07} \times \frac{1}{(1 + 0.08)^2}$	₹ 214.33

In order to maintain his receipt at ₹ 2,000 for first 3 year, he would sell

10 shares in first year @ ₹ 214.33 for	₹ 2,143.30
9 shares in second year @ ₹ 231.48 for	₹ 2,083.32
8 shares in third year @ ₹ 250 for	₹ 2,000.00

At the end of 3<sup>rd</sup> year, he would be having 973 shares valued @ ₹ 250 each i.e. ₹ 2,43,250. On these 973 shares, his dividend income for year 4 would be @ ₹ 2.50 i.e. ₹ 2,432.50.

So, if the project is taken up by the company, the investor would be able to maintain his receipt of at least ₹ 2,000 for first three years and would be getting increased income thereafter.

- (c) Sustainable growth is important to enterprise long-term development. Too fast or too slow growth will go against enterprise growth and development, so financial should play important role in enterprise development, adopt suitable financial policy initiative to make sure enterprise growth speed close to sustainable growth ratio and have sustainable healthy development.

The sustainable growth rate (SGR) of a firm is the maximum rate of growth in sales that can be achieved, given the firm's profitability, asset utilization, and desired dividend payout and debt (financial leverage) ratios. The sustainable growth rate is a measure of how much a firm can grow without borrowing more money. After the firm has passed this rate, it must borrow funds from another source to facilitate growth. Variables typically include the net profit margin on new and existing revenues; the asset turnover ratio, which is the ratio of sales revenues to total assets; the assets to beginning of period equity ratio; and the retention rate, which is defined as the fraction of earnings retained in the business.

$$\text{SGR} = \text{ROE} \times (1 - \text{Dividend payment ratio})$$

Sustainable growth models assume that the business wants to:

- (1) maintain a target capital structure without issuing new equity;
- (2) maintain a target dividend payment ratio; and
- (3) increase sales as rapidly as market conditions allow.

**3. (a) (i) Earning per share of company MK Ltd after merger:-**

Exchange ratio 160 : 200 = 4 : 5.

that is 4 shares of MK Ltd. for every 5 shares of NN Ltd.

∴ Total number of shares to be issued =  $\frac{4}{5} \times 3,00,000 = 2,40,000$  Shares.

∴ Total number of shares of MK Ltd. and NN Ltd. = 12,00,000 (MK Ltd.) + 2,40,000 (NN Ltd.)  
= 14,40,000 Shares

Total profit after tax = ₹ 60,00,000 MK Ltd.

= ₹ 18,00,000 NN Ltd.

= ₹ 78,00,000

∴ EPS. (Earning Per Share) of MK Ltd. after merger

₹ 78,00,000 / 14,40,000 = ₹ 5.42 per share

**(ii) To find the exchange ratio so that shareholders of NN Ltd. would not be at a Loss:**

Present earning per share for company MK Ltd.

= ₹ 60,00,000 / 12,00,000 = ₹ 5.00

Present earning per share for company NN Ltd.

= ₹ 18,00,000 / 3,00,000 = ₹ 6.00

∴ Exchange ratio should be 6 shares of MK Ltd. for every 5 shares of NN Ltd.

∴ Shares to be issued to NN Ltd. =  $3,00,000 \times \frac{6}{5} = 3,60,000$  shares

Now, total No. of shares of MK Ltd. and NN Ltd. = 12,00,000 (MK Ltd.) + 3,60,000 (NN Ltd.)  
= 15,60,000 shares

∴ EPS after merger = ₹ 78,00,000 / 15,60,000 = ₹ 5.00 per share

Total earnings available to shareholders of NN Ltd. after merger = 3,60,000 shares × ₹ 5.00 = ₹ 18,00,000.

This is equal to earnings prior merger for NN Ltd.

∴ Exchange ratio on the basis of earnings per share is recommended.

(b) (i) **Number of Units in each Scheme**

MF 'X'	$\frac{\text{₹ } 2,00,000}{\text{₹ } 10.30}$	= 19,417.48
MF 'Y'	$\frac{\text{₹ } 4,00,000}{\text{₹ } 10.10}$	= 39,603.96
MF 'Z'	$\frac{\text{₹ } 2,00,000}{\text{₹ } 10.00}$	= 20,000.00

(ii) **Total NAV on 31.03.2018**

MF 'X'	= 19,417.48 x ₹ 10.25	₹ 1,99,029.17
MF 'Y'	= 39,603.96 x ₹ 10.00	₹ 3,96,039.60
MF 'Z'	= 20,000.00 x ₹ 10.20	₹ 2,04,000.00
Total		₹ 7,99,068.77

(iii) **Total Yield**

	Capital Yield	Dividend Yield	Total
MF 'X'	₹ 1,99,029.17 - ₹ 2,00,000 = - ₹ 970.83	₹ 6,000	₹ 5,029.17
MF 'Y'	₹ 3,96,039.60 - ₹ 4,00,000 = - ₹ 3,960.40	Nil	- ₹ 3,960.40
MF 'Z'	₹ 2,04,000 - ₹ 2,00,000 = ₹ 4,000	₹ 5,000	₹ 9,000.00
Total			₹ 10,068.77

$$\text{Total Yield} = \frac{\text{₹ } 10,068.77}{\text{₹ } 8,00,000} \times 100 = 1.2586\%$$

(iv) **No. of Days Investment Held**

	MF 'X'	MF 'Y'	MF 'Z'
Let No. of days be	X	Y	Z
Initial Investment (₹)	2,00,000	4,00,000	2,00,000
Yield (₹)	5,029.17	-3,960.40	9,000.00
Yield (%)	2.5146	- 0.9901	4.5
Period of Holding (Days)	$\frac{2.5146}{9.66} \times 365$ = 95 Days	$\frac{-0.9901}{-11.66} \times 365$ = 31 Days	$\frac{4.5}{24.15} \times 365$ = 68 Days

Date of Original Investment 26.12.17

28.02.18

22.01.18

(c) There are four asset allocation strategies:

- (a) **Integrated Asset Allocation:** Under this strategy, capital market conditions and investor objectives and constraints are examined and the allocation that best serves the investor's needs while incorporating the capital market forecast is determined.

- (b) **Strategic Asset Allocation:** Under this strategy, optimal portfolio mixes based on returns, risk, and co-variances is generated using historical information and adjusted periodically to restore target allocation within the context of the investor's objectives and constraints.
- (c) **Tactical Asset Allocation:** Under this strategy, investor's risk tolerance is assumed constant and the asset allocation is changed based on expectations about capital market conditions.
- (d) **Insured Asset Allocation:** Under this strategy, risk exposure for changing portfolio values (wealth) is adjusted; more value means more ability to take risk.

4. (a) **No. of the Future Contract to be obtained to get a complete hedge**

$$= \frac{10000 \times ₹22 \times 1.5 - 5000 \times ₹40 \times 2}{₹1000}$$

$$= \frac{₹3,30,000 - ₹4,00,000}{₹1000} = 70 \text{ contracts}$$

Thus, by purchasing 70 Nifty future contracts to be long to obtain a complete hedge.

Cash Outlay

$$= 10000 \times ₹22 - 5000 \times ₹40 + 70 \times ₹1,000$$

$$= ₹2,20,000 - ₹2,00,000 + ₹70,000 = ₹90,000$$

Cash Inflow at Close Out

$$= 10000 \times ₹22 \times 0.98 - 5000 \times ₹40 \times 1.03 + 70 \times ₹1,000 \times 0.985$$

$$= ₹2,15,600 - ₹2,06,000 + ₹68,950 = ₹78,550$$

Gain/ Loss

$$= ₹78,550 - ₹90,000 = - ₹11,450 \text{ (Loss)}$$

- (b) First of all, to calculate Cost of Equity we shall compute the Equity Beta of STR Ltd. as follows:

$$\beta_a = \beta_e \left[ \frac{E}{E + D(1-t)} \right]$$

$$1.11 = \beta_e \left[ \frac{250}{250 + 80(1-0.30)} \right]$$

$$\beta_e = 1.36$$

then we shall compute the Cost of Equity as per CAPM as follows:

$$k_e = R_f + \beta \times \text{Market Risk Premium}$$

$$= 8.5\% + 1.36 \times 9\%$$

$$= 8.5\% + 12.24\% = 20.74\%$$

$$\text{Cost of Debt } (k_d) = 11\%(1 - 0.30) = 7.70\%$$

$$\text{WACC } (k_o) = k_e \times \frac{E}{E + D} + k_d \times \frac{D}{E + D}$$

$$= 20.74 \times \frac{250}{330} + 7.70 \times \frac{80}{330}$$

$$= 15.71 + 1.87 = 17.58\%$$

Taxable Income = ₹ 50 Crore / (1 - 0.30)

$$= ₹ 7142.86 \text{ lakhs}$$

Operating Income = Taxable Income + Interest

$$= ₹ 7142.86 \text{ lakhs} + ₹ 880 \text{ lakhs}$$

$$= ₹ 8022.86 \text{ lakhs}$$

EVA = EBIT (1 - Tax Rate) – WACC x Invested Capital

$$= ₹ 8022.86 \text{ lakhs} (1 - 0.30) - 17.58\% \times ₹ 330 \text{ Crore}$$

$$= ₹ 5616.00 \text{ lakhs} - ₹ 5801.40 \text{ lakhs} = - ₹ 185.40 \text{ lakhs}$$

(c) Following are main categories of risks to which TRC Cables is exposed to:

(i) Financial Risks: TRC is exposed to following financial risks:

- (1) Currency Risk: Since most of the Receipts and Payments of TRC are denominated in Non-INR currencies it is exposed to Currency Risk.
- (2) Commodity Risk: As major constituents of production of TRC are commodities such as copper, aluminum etc. it is subject to Commodity Risk.
- (3) Interest Rate Risk: As TRC borrows and invest money in short-term instruments it is exposed to Interest Rate Risk.
- (4) Counter Party Risk: Due to relaxation of norms for granting credits certainly the receivable amount must have increased resulting in increased Credit Risk.
- (5) Liquidity Risk: Since for short-term funding requirements TRC is using Commercial Papers etc. they are exposed to Liquidity Risk as in time of need if funds are not available from these sources then securities shall be sold at discounted price.
- (6) Political Risk: As TRC is operating in various other countries it is also exposed to Political Risks such as Restriction on Conversion of local earnings into foreign currency, restrictions on remittance etc.

(ii) Settlement Risk: The use of OTC Derivatives by TRC also expose it to the settlement risk as the parties with whom it has entered into the contract may not honor the same.

5. (a) (i) Average return from the portfolio for the year ended 31.3.2015

Calculation of return on portfolio for 2014-15	(Calculation in ₹ / share)		
	X Ltd.	Y Ltd.	
Dividend received during the year	10	3	
Capital gain/loss by 31.03.15			
Market value by 31.03.15	220	290	
Cost of investment	200	300	
Gain/loss	20	(-)10	
Yield	30	(-)7	
Cost	200	300	

% return	15%	(-)2.33%	
Weight in the portfolio	57	43	
Weighted average return			7.55%

- (ii) Average return from the portfolio for the year ended 2015-16 shall be calculated using the concept of joint probability as follows:

X Ltd.

Path	Income from Dividend (₹)	Gain from Market Price (₹)	Total Yield (₹)	Joint Prob.	Exp. Yield (₹)
1	10	220 – 220 = 0	10	0.20 x 0.20 = 0.04	0.40
2	10	250 – 220 = 30	40	0.20 x 0.50 = 0.10	4.00
3	10	280 – 220 = 60	70	0.20 x 0.30 = 0.06	4.20
4	15	220 – 220 = 0	15	0.30 x 0.20 = 0.06	0.90
5	15	250 – 220 = 30	45	0.30 x 0.50 = 0.15	6.75
6	15	280 – 220 = 60	75	0.30 x 0.30 = 0.09	6.75
7	20	220 – 220 = 0	20	0.50 x 0.20 = 0.10	2.00
8	20	250 – 220 = 30	50	0.50 x 0.50 = 0.25	12.50
9	20	280 – 220 = 60	80	0.50 x 0.30 = 0.15	12.00
Expected Yield (₹)					49.50
Market Value on 01.04.2015 (₹)					220
% Return					22.50

Y Ltd.

Path	Income from Dividend (₹)	Gain from Market Price (₹)	Total Yield (₹)	Joint Prob.	Exp. Yield (₹)
1	1.50	290 – 290 = 0	1.50	0.20 x 0.20 = 0.04	0.06
2	1.50	310 – 290 = 20	21.50	0.20 x 0.50 = 0.10	2.15
3	1.50	330 – 290 = 40	41.50	0.20 x 0.30 = 0.06	2.49
4	2.00	290 – 290 = 0	2.00	0.30 x 0.20 = 0.06	0.12
5	2.00	310 – 290 = 20	22.00	0.30 x 0.50 = 0.15	3.30
6	2.00	330 – 290 = 40	42.00	0.30 x 0.30 = 0.09	3.78
7	3.50	290 – 290 = 0	3.50	0.50 x 0.20 = 0.10	0.35
8	3.50	310 – 290 = 20	23.50	0.50 x 0.50 = 0.25	5.88
9	3.50	330 – 290 = 40	43.50	0.50 x 0.30 = 0.15	6.52
Expected Yield (₹)					24.65
Market Value on 01.04.2015 (₹)					290
% Return					8.50

Weight in portfolio (1,00,000 x 220): (50,000 x 290)

60.30 : 39.70

Weighted average (Expected) return (0.6030 x 22.50 + 0.3970 x 8.50)

16.94%



- (iii) To analyze the risk of each investment we need to calculate the Standard Deviation of each investment as follows:

X Ltd.

Path	Prob. (1)	Yield (₹)	Dev. ( $P_X - \overline{P_X}$ )	Square of dev. (2)	(1) X (2)
1	0.04	10	-39.50	1560.25	62.41
2	0.10	40	-9.50	90.25	9.03
3	0.06	70	20.50	420.25	25.22
4	0.06	15	-34.50	1190.25	71.42
5	0.15	45	-4.50	20.25	3.04
6	0.09	75	25.50	650.25	58.52
7	0.10	20	-29.50	870.25	87.03
8	0.25	50	0.50	0.25	0.06
9	0.15	80	30.50	930.25	139.54
					$\sigma^2_M = 456.27$

Standard Deviation ( $\sigma_X$ )

21.36

Y Ltd.

Path	Prob. (1)	Yield (₹)	Dev. ( $P_Y - \overline{P_Y}$ )	Square of dev. (2)	(1) X (2)
1	0.04	1.50	-23.15	535.92	21.44
2	0.10	21.50	-3.15	9.92	0.99
3	0.06	41.50	16.85	283.92	17.04
4	0.06	2.00	-22.65	513.02	30.78
5	0.15	22.00	-2.65	7.02	1.05
6	0.09	42.00	17.35	301.02	27.09
7	0.10	3.50	-21.15	447.32	44.73
8	0.25	23.50	-1.15	1.32	0.33
9	0.15	43.50	18.85	355.32	53.30
					$\sigma^2_N = 196.75$

Standard Deviation ( $\sigma_Y$ )

14.03

- (iv) Although Expected Return is higher in case of X Ltd. but it also has higher risk due to High S.D.

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

- (i) **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.

- (ii) *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.
  - (iii) *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.
  - (iv) *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.
  - (v) *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.
  - (vi) *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.
- (c) Following are major Market Indicators:
- (i) **Breadth Index:** It is an index that covers all securities traded. It is computed by dividing the net advances or declines in the market by the number of issues traded. The breadth index either supports or contradicts the movement of the Dow Jones Averages. If it supports the movement of the Dow Jones Averages, this is considered sign of technical strength and if it does not support the averages, it is a sign of technical weakness i.e. a sign that the market will move in a direction opposite to the Dow Jones Averages. The breadth index is an addition to the Dow Theory and the movement of the Dow Jones Averages.
  - (ii) **Volume of Transactions:** The volume of shares traded in the market provides useful clues on how the market would behave in the near future. A rising index/price with increasing volume would signal buy behaviour because the situation reflects an unsatisfied demand in the market. Similarly, a falling market with increasing volume signals a bear market and the prices would be expected to fall further. A rising market with decreasing volume indicates a bull market while a falling market with dwindling volume indicates a bear market. Thus, the volume concept is best used with another market indicator, such as the Dow Theory.
  - (iii) **Confidence Index:** It is supposed to reveal how willing the investors are to take a chance in the market. It is the ratio of high-grade bond yields to low-grade bond yields. It is used by market analysts as a method of trading or timing the purchase and sale of stock, and also, as a forecasting device to determine the turning points of the market. A rising confidence index is expected to precede a rising stock market, and a fall in the index is expected to precede a drop in stock prices. A fall in the confidence index represents the fact that low-grade bond yields are rising faster or falling more slowly than high grade yields. The confidence index is usually, but not always a leading indicator of the market. Therefore, it should be used in conjunction with other market indicators.
  - (iv) **Relative Strength Analysis:** The relative strength concept suggests that the prices of some securities rise relatively faster in a bull market or decline more slowly in a bear market than other securities i.e. some securities exhibit relative strength. Investors will earn higher returns by investing in securities which have demonstrated relative strength in the past because the relative strength of a security tends to remain undiminished over time.

Relative strength can be measured in several ways. Calculating rates of return and classifying those securities with historically high average returns as securities with high relative strength is one of them. Even ratios like security relative to its industry and security relative to the entire market can also be used to detect relative strength in a security or an industry.

- (v) **Odd - Lot Theory:** This theory is a contrary - opinion theory. It assumes that the average person is usually wrong and that a wise course of action is to pursue strategies contrary to popular opinion. The odd-lot theory is used primarily to predict tops in bull markets, but also to predict reversals in individual securities.

**OR**

Despite being a country of many cultures and communities traditionally inclined to business and entrepreneurship, India still ranks low on comparative ratings across entrepreneurship, innovation and ease of doing business. The reasons are obvious. These include our old and outdated draconian rules and regulations which provides a hindrance to our business environment for a long time. Other reasons are red tapism, our time consuming procedures, and lack of general support for entrepreneurship. Off course, things are changing in recent times.

As per Investopedia, Angel investors invest in small startups or entrepreneurs. Often, angel investors are among an entrepreneur's family and friends. The capital angel investors provide may be a one-time investment to help the business propel or an ongoing injection of money to support and carry the company through its difficult early stages.

Angel investors provide more favorable terms compared to other lenders, since they usually invest in the entrepreneur starting the business rather than the viability of the business. Angel investors are focused on helping startups take their first steps, rather than the possible profit they may get from the business. Essentially, angel investors are the opposite of venture capitalists.

Angel investors are also called informal investors, angel funders, private investors, seed investors or business angels. These are affluent individuals who inject capital for startups in exchange for ownership equity or convertible debt. Some angel investors invest through crowdfunding platforms online or build angel investor networks to pool in capital.

Angel investors typically use their own money, unlike venture capitalists who take care of pooled money from many other investors and place them in a strategically managed fund.

Though angel investors usually represent individuals, the entity that actually provides the fund may be a limited liability company, a business, a trust or an investment fund, among many other kinds of vehicles.

Angel investors who seed startups that fail during their early stages lose their investments completely. This is why professional angel investors look for opportunities for a defined exit strategy, acquisitions or initial public offerings (IPOs).

6. (a) To evaluate which option would be better we shall compute the outflow under each option as follows:

(i) **Pay Immediately availing discount**

Particulars		
Spot Rate		₹ 66.98
Amount required in US\$	[US\$ 8 Million (1 – 0.01)]	US\$ 7.92 Million
Amount required in ₹	[₹ 66.98 x US\$ 7.92 Million]	₹ 53.0482 Crore
Cash Available		₹ 0.2500 Crore

Loan required	₹ 52.7982 Crore
Interest for 90 days @ 9%	₹ 1.1880 Crore
Total Outflow	₹ 53.9862 Crore

(ii) **Pay the supplier on 60<sup>th</sup> day and avail bank's loan (after utilizing cash) for 30 days.**

Particulars	
Applicable Forward Rate	₹ 67.16
Amount required in ₹ [₹ 67.16 x US\$ 8 Million]	₹ 53.7280 Crore
Loan required [₹ 53.7280 Crore – ₹ 0.25 Crore]	₹ 53.4780 Crore
Interest for 30 days @ 9%	₹ 0.4011 Crore
	₹ 53.8791 Crore
Interest earned on Cash for 60 days @ 4%	₹ 0.0017 Crore
Total Outflow	₹ 53.8774 Crore

(iii) **Avail supplier offer of 90 days credit and utilize cash available**

Particulars	
Amount Payable	US\$ 8 Million
Interest for 30 days @ 8%	US\$ 0.0533 Million
Amount required in ₹	US\$ 8.0533 Million
Applicable Forward Rate	₹ 68.03
Amount required in ₹ [₹ 68.03 x US\$ 8.0533 Million]	₹ 54.7866 Crore
Cash Available	₹ 0.2500 Crore
Interest earned on Cash for 90 days @ 4%	₹ 0.0025 Crore
Total Outflow	₹ 54.5341 Crore

**Decision:** Cash outflow is least in case of Option (ii) same should be opted for.

(b) (i) The optional hedge ratio to minimize the variance of Hedger's position is given by:

$$H = \rho \frac{\sigma_S}{\sigma_F}$$

Where

$\sigma_S$  = Standard deviation of  $\Delta S$  (Change in Spot Prices)

$\sigma_F$  = Standard deviation of  $\Delta F$  (Change in Future Prices)

$\rho$  = coefficient of correlation between  $\Delta S$  and  $\Delta F$

H = Hedge Ratio

$\Delta S$  = change in Spot price.

$\Delta F$  = change in Future price.

Accordingly

Standard deviation of  $\Delta S = \sqrt{16\%} = 4\%$  and

Standard deviation of  $\Delta F = \sqrt{36\%} = 6\%$  and

$$H = 0.75 \times \frac{0.04}{0.06} = 0.5$$

(ii) Since the company is long position in Spot (Cash) Market it shall take Short Position in Future Market.

(iii) Since contract size of one contract is 1,000 Kg, the

$$\text{No. of contract to be short} = \frac{10,000 \text{ Kgs}}{1,000 \text{ Kgs}} \times 0.50 = 5 \text{ Contracts}$$

$$\text{Amount} = 5000 \times ₹ 534 = ₹ 26,70,000$$

(c) Here are some of the innovative sources for funding a Startup:

- (i) **Personal financing.** It may not seem to be innovative but you may be surprised to note that most budding entrepreneurs never thought of saving any money to start a business. This is important because most of the investors will not put money into a deal if they see that you have not contributed any money from your personal sources.
- (ii) **Personal credit lines.** One qualifies for personal credit line based on one's personal credit efforts. Credit cards are a good example of this. However, banks are very cautious while granting personal credit lines. They provide this facility only when the business has enough cash flow to repay the line of credit.
- (iii) **Family and friends.** These are the people who generally believe in you, without even thinking that your idea works or not. However, the loan obligations to friends and relatives should always be in writing as a promissory note or otherwise.
- (iv) **Peer-to-peer lending.** In this process group of people come together and lend money to each other. Peer to peer to lending has been there for many years. Many small and ethnic business groups having similar faith or interest generally support each other in their start up endeavors.
- (v) **Crowdfunding.** Crowdfunding is the use of small amounts of capital from a large number of individuals to finance a new business initiative. Crowdfunding makes use of the easy accessibility of vast networks of people through social media and crowdfunding websites to bring investors and entrepreneurs together.
- (vi) **Microloans.** Microloans are small loans that are given by individuals at a lower interest to a new business ventures. These loans can be issued by a single individual or aggregated across a number of individuals who each contribute a portion of the total amount.
- (vii) **Vendor financing.** Vendor financing is the form of financing in which a company lends money to one of its customers so that he can buy products from the company itself. Vendor financing also takes place when many manufacturers and distributors are convinced to defer payment until the goods are sold. This means extending the payment terms to a longer period for e.g. 30 days payment period can be extended to 45 days or 60 days. However, this depends on one's credit worthiness and payment of more money.
- (viii) **Purchase order financing.** The most common scaling problem faced by startups is the inability to find a large new order. The reason is that they don't have the necessary cash to produce and deliver the product. Purchase order financing companies often advance the required funds directly to the supplier. This allows the transaction to complete and profit to flow up to the new business.
- (ix) **Factoring accounts receivables.** In this method, a facility is given to the seller who has sold the good on credit to fund his receivables till the amount is fully received. So, when the goods are sold on credit, and the credit period (i.e. the date upto which payment shall be made) is for example 6 months, factor will pay most of the sold amount up front and rest of the amount later. Therefore, in this way, a startup can meet his day to day expenses.