MOCK TEST PAPER 1

FINAL COURSE: GROUP – I

PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/HINTS

1. (a) (i) If ZX Ltd. does not take forward (Unhedged Position):

Expected Rate = ₹ 77 × 0.15 + ₹ 71 × 0.25 + ₹ 79 × 0.20 + ₹ 74 × 0.40

= ₹ 11.55 + ₹ 17.75 + ₹ 15.80 + ₹ 29.60 = ₹ 74.70

Expected Amount Payable = USD 80,000 × ₹ 74.70 = ₹ 59,76,000

(ii) If the ZX Ltd. hedge its position in the forward market:

Particulars	Amount (₹)
If company purchases US$ 80,000 forward premium is (80000 × 74 × 1%)	59,200
Interest on ₹ 59,200 for 6 months at 10%	2,960
Total hedging cost (a)	62,160
Amount to be paid for US$ 80,000 @ ₹ 74.00 (b)	59,20,000
Total Cost (a) + (b)	59,82,160

Advice: Since cashflow is less in case of unhedged position company should opt for the same.

Total Marks = 8

(b) (i) (1) (A) Market Price of Bond

= 1,000 X 6.75% X (PVIAF 9%,7) + 1,050 X (PVIF 9%,7)

= 67.50 X 5.032 + 1050 X 0.547

= 339.66 + 574.35 = ₹ 914.01

(B) Duration of Bond

Year	Cash flow	P.V. @ 9%		Proportion of bond value	Proportion of bond value x time (years)
1	67.50	0.917	61.898	0.0677	0.0677
2	67.50	0.842	56.835	0.0622	0.1244
3	67.50	0.772	52.110	0.0570	0.1710
4	67.50	0.708	47.790	0.0523	0.2092
5	67.50	0.650	43.875	0.0480	0.2400
6	67.50	0.596	40.230	0.0440	0.2640
7	1117.50	0.547	611.273	0.6688	4.6816
			914.011		5.7579

Duration of the Bond is 5.758 years

***Alternatively,* as per Short Cut Method**

$$D = \frac{1+YTM}{YTM} - \frac{(1+YTM)+t(c-YTM)}{c\left[(1+YTM)^{t}-1\right]+YTM}$$

Where YTM = Yield to Maturity

c = Coupon Rate

t = Years to Maturity

$$= \frac{1.09}{0.09} - \frac{1.09 + 7(0.0675 - 0.09)}{0.0675\,[(1.09)^{7} - 1] + 0.09} = 5.72$$

(C) Volatility of Bond-

Volatility = Duration/(1+YTM) = 5.758/(1+0.09) = 5.28

(2) Required yield of new Investor

= 67.50 PVIAF (r, 7) + 1050 X PVIF (r, 7)

Now, let us discount the cash flow by 9%

PV @ 9% = 67.50 X 5.032 + 1050 X 0.547

= 339.66 + 574.35 = 914.01

NPV @ 9% = 914.01 – 897 = ₹17.01

Since, NPV of bond is positive, We need to increase discount rate say 12%

= 67.50 PVIAF (12%,7) + 1050 X PVIF (12%,7)

= 67.50 X [0.893 + 0.797 + 0.712 + 0.636 + 0.567 + 0.507 + 0.452] + 1050 X 0.452

= 67.50 X 4.564 + 474.60

= 308.07 + 474.60= 782.67

NPV @ 12% = 782.67 - 897= - ₹114.33

Now we use interpolation formula

$$K_e = LR + \frac{NPV\,at\,LR}{NPV\,at\,LR - NPV\,at\,HR} \times \Delta r$$

$$= 9\% + \frac{17.01}{17.01 - (-114.33)} \times 3\%$$

$$= 9\% + \frac{17.01}{131.34} \times 3\%$$

= 9% + 0.39% = 9.39%

(ii) Relationship between the price of the bond & YTM is opposite or inverse **Total Marks = 8**

(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.

Total Marks = 4

2. (a) EVA = Income Earned – (Cost of Capital x Total Investment)

Total Investments

	Amount (₹ in Lakhs)
Working Capital	25.00
Property, Plant & Equipments	50.00
Patent Rights	50.00
Total	125.00

EVA = Profit Earned – WACC x Invested Capital

= ₹ 18.5 Lakhs – 14% x ₹ 125 Lakhs

= ₹ 1.00 Lakhs

Total Marks = 6

(b) (i) Cancellation Rate:

The forward sale contract shall be cancelled at Spot TT Purchase for $ prevailing on the date of cancellation as follows:

$/ ₹ Market Buying Rate	₹ 80.01
Less: Exchange Margin @ 0.18%	₹ 0.14
	₹ 79.87

(ii) Amount payable on $ 5,00,000

Bank sells $ 5,00,000 @ ₹ 82.60	₹ 4,13,00,000
Bank buys $ 5,00,000 @ ₹ 79.87	₹ 3,99,35,000
Amount payable by customer	₹ 13,65,000

(iii) Swap Loss

On 1st February the bank does a swap sale of $ at market buying rate of ₹ 80.10 and forward purchase for one month at market selling rate of ₹ 80.45.

Bank buys at	₹ 80.45
Bank sells at	₹ 80.10
Amount payable by customer	₹ 0.35

Swap Loss for $ 5,00,000 in ₹ = ₹ 1,75,000

(iv) Interest on Outlay of Funds

On 1st February, the bank receives delivery under cover contract at ₹ 80.90 and sell spot at ₹ 80.10.

Bank buys at	₹ 80.90
Bank sells at	₹ 80.10
Amount payable by customer	₹ 0.80

Outlay for $ 5,00,000 in ₹ 4,00,000

Interest on ₹ 4,00,000 @ 15% for 15 days ₹ 2,465.75

(v) New Contract Rate

The contract will be extended at current rate

$/ ₹ Market forward selling Rate for April	₹ 80.75
Add: Exchange Margin @ 0.18%	₹ 0.14
	₹ 80.89

Rounded off to ₹ 80.90

(vi) Total Cost

Cancellation Charges	₹ 13,65,000.00
Swap Loss	₹ 1,75,000.00
Interest	₹ 2,465.75
	₹ 15,42,465.75

Total Marks = 10

(c) No, I do not agree with the given statement because while peer-to-peer lending is in existence for many years the crowd funding is contemporary source of finance for Startup finance.

Further in peer-to-peer lending a group of people come together and lend money to each other. Many small and ethnic business groups having similar faith or interest generally support each other in their start up endeavors.

On the other hand, 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. **Total Marks = 4**

Or

Differences between Systematic Risk and Unsystematic Risk

S. No.	Systematic Risk	Unsystematic Risk
1.	Refers to the variability of return on stocks or portfolio associated with changes in return on the market as a whole.	Refers to risk unique to a particular company or industry.
2.	It arises due to risk factors that affect the overall market such as changes in the nation's economy, tax reform by the Government or a change in the world energy situation.	It arises due to risk factors that are particular to any company or industry.
3.	Since this affects securities overall and consequently, cannot be diversified away.	This risk can be virtually eliminated from a portfolio through diversification.

4.	Beta is a measure of Systematic Risk.	Standard Deviation is a measure of Systematic Risk.

Total Marks = 4

3. (a) (i) External Funds Requirement (EFR):

(₹ in lakhs)

	(₹)
Expected sales (₹ 600 + 20% of ₹ 600)	720.00
Profit margin @ 4%	28.80
Dividend payout ratio @ 50%	14.40
Balance to be ploughed back (A)	14.40
Additional funds required (₹ 1400 - ₹ 200*) x 0.20 (B)	240.00
Balance to be met from external source (B - A)	**225.60**

* As current liabilities shall also be increased proportionately with increase in sales.

(ii) Amount to be raised from different sources with following conditions:

- Sales to short term loans and payables & provisions 4:3
- Ratio of fixed assets to long term loans 1.5
- Debt equity ratio should not exceed 1.5

(1) Amount to be raised from short term funds:

	(₹ in lakhs)
New amount of short-term loans and payables & provision $\left(\frac{3}{4} \text{x } 600\right)$	450
Less: Existing Amount of short-term loans and payables & provision	500
Amount to be raised from short term funds	Nil

(2) Amount to be raised from Long term funds:

	(₹ in lakhs)
New fixed assets (₹ 600 + 20% of ₹ 600)	720
New long-term loans (₹ 720/1.5)	480
Less: Existing long-term loans	400
Amount to be raised from Long term funds	80

(3) Amount to be raised from equity funds:

	(₹ in lakhs)
Amount to be raised from external sources	225.60
Less: Amount to be raised from short term funds	----
Less: Amount to be raised from Long term funds	80.00
Balance amount to be raised from equity funds	145.60

Alternative Solution

(i) External Funds Requirement (EFR)

$$EFR = \left(\frac{TA}{S} - \frac{P}{S}\right) x\ \Delta S - N \times \text{Projected Sales} \times (1 - D)$$

Where,

TA = Total Assets

S = Current Sales

P = Payables and Provisions

ΔS = Change in Sales

N = Net Profit Margin Ratio

D = Dividend Payout Ratio

Accordingly,

$$EFR = \left(\frac{1,400}{600} - \frac{200}{600}\right) x\ 120 - 0.04 \times 720 \times 0.5$$

= ₹ 225.6 lakhs

(ii) Funds to be raised from Various Sources

(1) Short Term Funds

Let X be the new Short-Term Loan then meeting the given condition the Additional Requirement shall be computed as follows:

$$\frac{4}{3} = \frac{600 \times 1.2}{200 \times 1.2 + X}$$

X = 300.00

Short-Term Loans required	₹ 300.00 lakhs
Less: Existing	₹ 300.00 lakhs
Additional requirement	0.00 lakhs

(2) Long term funds

Let Y be the new Long -Term Loans then meeting the given condition the Additional Requirement shall be computed as follows:

$$1.5 = \frac{FA}{\text{Long term loans}}$$

$$1.5 = \frac{600 \times 1.2}{Y}$$

Y = 480

New Long Term Loans	₹ 480.00 Lakhs
Existing	₹ 400.00 Lakhs
Additional	**₹ 80.00 Lakhs**

(3) Equity to be raised

EFR	₹ 225.60 Lakhs
Less: Short Term Loans	0.00 Lakhs
Long term	₹ 80.00 Lakhs
Equity to be raised	**₹ 145.60 Lakhs**

$$\text{New DER} = \frac{\text{Debt}}{\text{Shareholder's Fund}}$$

$$= \frac{480}{300 + 145.60 + (1.2 \times 200)}$$

$$= 0.70$$

Condition is satisfied

Total Marks = 8

(b) **(i)** 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. **Total Marks = 8**

(c) The key decisions falling within the scope of financial strategy are the following:

1. Financing decisions: These decisions deal with the mode of financing or mix of equity capital and debt capital.

2. Investment decisions: These decisions involve the profitable utilization of firm's funds especially in long-term projects (capital projects). Since the future benefits associated with such projects are not known with certainty, investment decisions necessarily involve risk. The projects are therefore evaluated in relation to their expected return and risk.

3. Dividend decisions: These decisions determine the division of earnings between payments to shareholders and reinvestment in the company.

4. Portfolio decisions: These decisions involve evaluation of investments based on their contribution to the aggregate performance of the entire corporation rather than on the isolated characteristics of the investments themselves. **Total Marks = 4**

4. (a) (i) Calculation of Annual CFAT

	Scenario 1	Scenario 2	Scenario 3
Annual Sales (in units) (A)	10,00,000	10,00,000	10,00,000
	US $	**US $**	**US $**
Selling price p.u.	10.00	10.00	10.00
Cost p.u.	6.00	5.70	5.55
Profit p.u. (B)	4.00	4.30	4.45
Total Profit (A x B)	40,00,000	43,00,000	44,50,000
Less: Depreciation	10,00,000	9,00,000	8,50,000
PBT	30,00,000	34,00,000	36,00,000
Less: Tax @30%	9,00,000	10,20,000	10,80,000
PAT	21,00,000	23,80,000	25,20,000
Add: Depreciation	10,00,000	9,00,000	8,50,000
Expected CFAT (US$)	**31,00,000**	**32,80,000**	**33,70,000**

(ii) Expected Value of CFAT

= US$ 31,00,000 x 0.4 + US$ 32,80,000 x 0.4 + US$ 33,70,000 x 0.2

= US$ 32,26,000

(iii) Viability of proposal:

Expected CFAT = US $ 32,26,000

Expected Growth Rate = 3%

$$\text{Expected Value of inflow in perpetuity} = \frac{\text{US\$ } 32,26,000\ (1.03)}{0.11 - 0.03}$$

$$= \frac{33,22,780}{0.08} = \text{US\$ } 4,15,34,750$$

	US $
Value of Inflows	4,15,34,750
Less: Initial Outlay	2,50,00,000
NPV of project	1,65,34,750

Since NPV is positive, project is viable. **Total Marks = 8**

(b) (i) Calculation of Income Available for Distribution

	Units (Lakh)	Per Unit (₹)	Total (₹ In lakh)
Income from January	300	0.0800	24.0000
Add: Dividend equalization collected on issue	5	0.0800	0.4000
	305	0.0800	24.4000
Add: Income from February		0.1180	36.0000
	305	0.1980	60.4000
Less: Dividend equalization paid on	2.50	0.1980	(0.4950)

repurchase			
	302.50	0.1980	59.9050
Add: Income from March		0.1554	47.0000
	302.50	0.3534	106.9050
Less: Dividend Paid		0.2474	(74.8335)
	302.50	0.1060	32.0715

(ii) Calculation of Issue Price at the end of January

	₹
Opening NAV	20.250
Add: Entry Load 2% of ₹ 20.25	0.405
	20.655
Add: Dividend Equalization collected on Issue Price	0.080
	20.735

(iii) Calculation of Repurchase Price at the end of February

	₹
Opening NAV	20.250
Less: Exit Load 2% of ₹ 20.250	(0.405)
	19.845
Add: Dividend Equalization paid on Issue Price	0.198
	20.043

(iv) Closing NAV at the end of March

		₹ (Lakh)
Opening Net Asset Value (₹ 20.25 × 300)		6075.000
Portfolio Value Appreciation		460.000
Issue of Fresh Units (5 × 20.735)		103.675
Income Received (24 + 36 + 47)		107.000
		6745.675
Less: Units repurchased (2.5 × 20.043)	- 50.1075	
Income Distributed	-74.8335	(-124.941)
Closing Net Asset Value		6620.734
Closing Units (300 + 5 – 2.5) lakh		302.50 lakh
Closing NAV as on 31st March		₹ 21.8867

Total Marks = 8

(c) Role of various participants in the process of securitization is as follows:

(a) Originator: It is the initiator of deal or can be termed as securitizer. It is an entity which sells the assets lying in its books and receives the funds generated through the sale of such assets.

(b) Special Purpose Vehicle: Since issuer originator transfers all rights in assets to SPV, it holds the legal title of these assets. It is created especially for the purpose of securitization only and normally could be in form of a company, a firm, a society or a trust.

(c) The Investors: Investors are the buyers of securitized papers which may be an individual, an institutional investor such as mutual funds, provident funds, insurance companies, mutual funds, Financial Institutions etc.

(d) Obligors: The amount due from the obligor is transferred to SPV and hence they form the basis of securitization process and their credit standing is of paramount importance in the whole process.

(e) Rating Agency: Since the securitization is based on the pools of assets rather than the originators, the assets have to be assessed in terms of its credit quality and credit support available.

(f) Receiving and Paying agent (RPA): Also, called Servicer or Administrator, it collects the payment due from obligor(s) and passes it to SPV. It also follow up with defaulting borrower and if required initiate appropriate legal action against them. Generally, an originator or its affiliates acts as servicer.

(g) Agent or Trustee: Trustees are appointed to oversee that all parties to the deal perform in the true spirit of terms of agreement. Normally, it takes care of interest of investors who acquires the securities.

(h) Credit Enhancer: Since investors in securitized instruments are directly exposed to performance of the underlying and sometime may have limited or no recourse to the originator, they seek additional comfort in the form of credit enhancement.

(i) Structurer: It brings together the originator, investors, credit enhancers and other parties to the deal of securitization. Normally, these are investment bankers also called arranger of the deal. It ensures that deal meets all legal, regulatory, accounting and tax laws requirements.

Total Marks = 4

5. (a) 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% × 1.20 = 14.40%
II	12% × 1.315 = 15.78%

Total Marks = 8

(b) Though Company IB has an advantage in both the markets but it has comparative more advantage in the INR floating-rate market. Company Zaki has a comparative advantage in the JPY fixed interest rate market.

However, company IB wants to borrow in the JPY fixed interest rate market and company Zaki wants to borrow in the INR floating-rate market. This gives rise to the swap opportunity.

IB raises INR floating rate at BPLR + 0.50% and Zaki raises JPY at 2.25%

Total Potential Gain = (INR interest differential) - (Yen rate differential)

= (BPLR + 2.50% - BPLR + 0.50%) + (2% - 2.25%) = 1.75%

Less Banker's commission (To be shared equally) = 0.25%

Net gain (To be shared equally: 0.75% each) = 1.50%

(i) Yes, a beneficial swap can be arranged

(ii) Effective cost of borrowing = pays to lenders + pays to other party -receives from other party + banker's commission

IB = BPLR + 0.50% +1.125%* - (BPLR + 0.50%) + 0.125% = 1.25%

(* has been arrived as 2% - 0.75% - 0.125%)

Zaki = 2.25% + BPLR + 0.50% - 1.125% + 0.125% = BPLR + 1.75%

Total Marks = 8

(c) The benefits of securitization can be viewed from the angle of various parties involved as follows:

(1) From the angle of originator

Originator (entity which sells assets collectively to Special Purpose Vehicle) achieves the following benefits from securitization.

(i) Off – Balance Sheet Financing: When loan/receivables are securitized it releases a portion of capital tied up in these assets resulting in off Balance Sheet financing leading to improved liquidity position which helps in expanding the business of the company.

(ii) More specialization in main business: By transferring the assets the entity could concentrate more on core business as servicing of loan is transferred to SPV. Further, in case of non-recourse arrangement even the burden of default is shifted.

(iii) Helps to improve financial ratios: Especially in case of Financial Institutions and Banks, it helps to manage Capital –To-Weighted Asset Ratio effectively.

(iv) Reduced borrowing Cost: Since securitized papers are rated due to credit enhancement even they can also be issued at reduced rate as of debts and hence the originator earns a spread, resulting in reduced cost of borrowings.

(2) From the angle of investor

Following benefits accrues to the investors of securitized securities.

1. Diversification of Risk: Purchase of securities backed by different types of assets provides the diversification of portfolio resulting in reduction of risk.

2. Regulatory requirement: Acquisition of asset backed belonging to a particular industry say micro industry helps banks to meet regulatory requirement of investment of fund in industry specific.

3. Protection against default: In case of recourse arrangement if there is any default by any third party then originator shall make good the least amount. Moreover, there can be insurance arrangement for compensation for any such default.

Total Marks = 4

6. (a) (i) Net cost of acquisition shall be computed as follows:

Cash Paid for the shares of Tall Ltd. (₹ 60 × 18,00,000)	₹ 10,80,00,000
Less: Value of Tall Ltd., as a separate entity (18,00,000 × ₹ 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	= ₹ 3/50 + 0.06 = 12%
Value of Merged company assuming perpetual growth	= 8%
Value of merged company (₹ 180 x 30,00,000) + (₹ 3/ (0.12 - 0.08) x 18,00,000 = 54,00,00,000 + (75 X 18,00,000)	= ₹ 67,50,00,000
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 x 187.50)	11,25,00,000
Less: CMP (18,00,000 x 50)	9,00,00,000
Net Cost of acquisition	2,25,00,000

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. (₹ 12 x 30,00,000)		₹ 3,60,00,000
Total Earnings of Tall Ltd. (₹ 5 x 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)	₹ 9,00,00,000	₹ 63,00,00,000
Gain from Acquisition		₹ 4,50,00,000

Total Marks = 8

(b) (i) Contract Size (₹ 9,170 x 50) = ₹ 4,58,500

Initial Margin (8% of 4,58,500) = ₹ 36,680

Maintenance Margin (6% of 4,58,500) = ₹ 27,510

(1) For investor taken Long position:

Day	Change in Future value (₹)	Margin A/c (₹)	Call Money (₹)
0	-----	36,680	
1	(₹ 9,380 - ₹ 9,170) x 50 = 10,500	47,180	
2	(₹ 9,520 - ₹ 9,380) x 50 = 7,000	54,180	
3	(₹ 9,100 - ₹ 9,520) x 50 = - 21,000	33,180	
4	(₹ 8,960 - ₹ 9,100) x 50 = - 7,000	36,680	10,500
5	(₹ 9,140 - ₹ 8,960) x 50 = 9,000	45,680	

For investor taken Short position:

Day	Change in Future value (₹)	Margin A/c (₹)	Call Money (₹)
0	-----	36,680	
1	(₹ 9,170 - ₹ 9,380) x 50 = -10,500	36,680	10,500
2	(₹ 9,380 - ₹ 9,520) x 50 = -7,000	29,680	
3	(₹ 9,520 - ₹ 9,100) x 50 = 21,000	50,680	
4	(₹ 9,100 - ₹ 8,960) x 50 = 7,000	57,680	
5	(₹ 8,960 - ₹ 9,140) x 50 = -9,000	48,680	

(ii) Calculation of Net Profit/Loss

(1) Long Position

	(₹)
Ending margin	45,680
Less: Initial Margin	36,680
Profit	9,000
Less: Margin Call	10,500
Net Loss	**1,500**

OR, Loss = (9,140 – 9,170) x 50 = (Rs. 1,500)

(2) Short Position

	(₹)
Ending margin	48,680
Less: Initial Margin	36,680
Profit	12,000
Less: Margin Call	10,500
Net Profit	**1,500**

OR, Profit = (9,170 – 7,040) x 50 = ₹ 1,500 **Total Marks = 8**

(c) Investing in stock futures differs from investing in equity options contracts in several ways:

- Nature: In options, the buyer of the options has the right but not the obligation to purchase or sell the stock. However while going in for a long futures position, the investor is obligated to square off his position at or before the expiry date of the futures contract.
- Movement of the Market: Options traders use a mathematical factor, the delta that measures the relationship between the options premium and the price of the underlying stock. At times, an options contract's value may fluctuate independently of the stock price. In contrast, the future contract will much more closely follow the movement of the underlying stock.
- The Price of Investing: When an options investor takes a long position, he or she pays a premium for the contract. The premium is often called a sunk cost. At expiration, unless the options contract is in the money, the contract is worthless and the investor has lost the entire premium. Stock future contracts require an initial margin deposit and a specific maintenance level of cash for mark to market margin. **Total Marks = 4**