

MOCK TEST PAPER 2

FINAL COURSE: GROUP – I

PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/HINTS

1. (a) Working Notes:

(1) Calculation of the project cash flows for VK Ltd.'s subsidiary in Farland

Fr.'000

Year	0	1	2	3	4	5
Cash flows from operations		32400	34992	37791	40815	44080
Depreciation		16000	16000	16000	16000	16000
Interest		600	600	600	600	600
Profit before Tax		15800	18392	21191	24215	27480
Farland Tax		3160	3678	4238	4843	5496
Profit after Tax		12640	14714	16953	19372	21984
Add back Depreciation		16000	16000	16000	16000	16000
Initial Investment	-80000	28640	30714	32953	35372	37984
Working Capital	-6000	---	---	---	---	---
Change in W.C.		-480	-518	-560	-605	-653
Loan Capital						-6000
Sale of Subsidiary	---	---	---	---	---	2000
	-80000	28160	30196	32393	34767	33331

(2) Expected Exchange Rates

Year	Rate
0	2.50
1	$2.50 \times 1.05 = 2.63$
2	$2.50 \times (1.05)^2 = 2.76$
3	$2.50 \times (1.05)^3 = 2.89$
4	$2.50 \times (1.05)^4 = 3.04$
5	$2.50 \times (1.05)^5 = 3.19$

(3) Calculation of Tax paid in India

Year	1	2	3	4	5
PBT (Fr)	15800	18392	21191	24215	27480
Tax @ 10%	1580	1839	2119	2422	2748
Exchange rate	2.63	2.76	2.89	3.04	3.19
Tax in India (INR '000)	601	666	733	797	861

Calculation Net Present Value (NPV) for VK Ltd.'s subsidiary at parent company level

Year	0	1	2	3	4	5
Project Cash Flows (Fr. '000)	-80000	28160	30196	32393	34767	33331
Exchange Rate (Fr./INR)	2.50	2.63	2.76	2.89	3.04	3.19
Cash Invested from India (INR '000)	-32000	--	--	--	--	--
Cash Received in India (INR '000)	--	10707	10941	11209	11437	10449
Tax in India (INR '000)		601	666	733	797	861
Lost export after tax (INR '000)	-32000	10106	10275	10476	10640	9588
Parent Cash Flow	-32000	9282	9426	9602	9740	8661
PVF	1	0.893	0.797	0.712	0.636	0.567
	-32000	8289	7513	6837	6195	4911
NPV						1745

Decision: Since NPV of the project is positive it should be accepted.

Total Marks = 10

(b) (i) Dirty Price

= Clean Price + Interest Accrued

$$= 99.42 + 100 \times \frac{10}{100} \times \frac{262}{360} = 106.70$$

(ii) First Leg (Start Proceed)

$$= \text{Nominal Value} \times \frac{\text{Dirty Price}}{100} \times \frac{100 - \text{Initial Margin}}{100}$$

$$= ₹8,00,00,000 \times \frac{106.70}{100} \times \frac{100 - 2}{100} = ₹8,36,52,800$$

$$\text{Second Leg (Repayment at Maturity)} = \text{Start Proceed} \times \left(1 + \text{Repo rate} \times \frac{\text{No. of days}}{360}\right)$$

$$= ₹8,36,52,800 \times \left(1 + 0.0565 \times \frac{14}{360}\right) = ₹8,38,36,604$$

Total Marks = 6

(c) This risk occurs due to non-honoring of obligations by the counter party which can be failure to deliver the goods for the payment already made or vice-versa or repayment of borrowings and interest etc. Thus, this risk also covers the credit risk i.e. default by the counter party.

The various hints that may provide counter party risk are as follows:

- Failure to obtain necessary resources to complete the project or transaction undertaken.
- Any regulatory restrictions from the Government.
- Hostile action of foreign government.
- Let down by third party.
- Have become insolvent.

Total Marks = 4

2. (a) Price/share of AB Ltd. for determination of number of shares to be issued

$$= (\text{₹ } 570 + \text{₹ } 430)/2 = \text{₹ } 500$$

Value of XY Ltd based on future cash flow capitalization (105×0.93)+(120×0.86)+(125×0.79)+(120×0.74)×(300×0.68)	₹ lakhs	592.40
Value of XY Ltd based on net assets	₹ lakhs	250.00
Average value (592.40+250)/2		421.20
No. of shares in AB Ltd to be issued ₹ 4,21,20,000/500	Nos.	84240
Basis of allocation of shares		
Fully paid equivalent shares in XY Ltd. (20+5) lakhs		2500000
Distribution to fully paid shareholders 84240×20/25		67392
Distribution to partly paid shareholders 84240-67392		16848

Total Marks = 8

- (b) (i) **Calculation of Portfolio Beta**

Security	Price of the Stock	No. of shares	Value	Weightage w_i	Beta B_i	Weighted Beta
A	349.30	5,000	17,46,500	0.093	1.15	0.107
B	480.50	7,000	33,63,500	0.178	0.40	0.071
C	593.52	8,000	47,48,160	0.252	0.90	0.227
D	734.70	10,000	73,47,000	0.390	0.95	0.370
E	824.85	2,000	16,49,700	0.087	0.85	0.074
			1,88,54,860			0.849

Portfolio Beta = 0.849

- (ii) **Calculation of Theoretical Value of Future Contract**

Cost of Capital = 10.5% p.a. Accordingly, the Continuously Compounded Rate of Interest In (1.105) = 0.0998

For February 2013 contract, $t = 58/365 = 0.1589$

Further $F = Se^{rt}$

$$F = \text{₹ } 5,900e^{(0.0998)(0.1589)}$$

$$F = \text{₹ } 5,900e^{0.015858}$$

$$F = \text{₹ } 5,900 \times 1.01598 = \text{₹ } 5,994.28$$

Alternatively, it can also be taken as follows:

$$= \text{₹ } 5900 e^{0.105 \times 58/365}$$

$$= \text{₹ } 5900 e^{0.01668}$$

$$= \text{₹ } 5900 \times 1.01682 = \text{₹ } 5,999.24$$

- (iii) When total portfolio is to be hedged:

$$= \frac{\text{Value of Spot Position requiring hedging}}{\text{Value of Future Contract}} \times \text{Portfolio Beta}$$

$$= \frac{1,88,54,860}{5994.28 \times 200} \times 0.849 = 13.35 \text{ contracts say 13 or 14 contracts}$$

(iv) When total portfolio beta is to be reduced to 0.6:

$$\begin{aligned} \text{Number of Contracts to be sold} &= \frac{P(\beta_P - \beta'_P)}{F} \\ &= \frac{1,88,54,860(0.849 - 0.600)}{5994.28 \times 200} = 3.92 \text{ contracts say 4 contracts} \end{aligned}$$

Total Marks = 8

(c) Besides the primary participants other parties involved into the securitization process are as follows:

- (i) **Obligors:** Actually, they are the main source of the whole securitization process. They are the parties who owe money to the firm and are assets in the Balance Sheet of Originator. 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.
- (ii) **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.
- (iii) **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.
- (iv) **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.
- (v) **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. In other words, they require credit rating of issued securities which also empowers marketability of the securities.
- (vi) **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

Or

The advantages of CAPM can be listed as:

- (i) **Risk Adjusted Return:** It provides a reasonable basis for estimating the required return on an investment which has risk built into it. Hence it can be used as Risk Adjusted Discount Rate in Capital Budgeting.
- (ii) **No Dividend Company:** It is useful in computing the cost of equity of a company which does not declare dividend.

There are certain limitations of CAPM as well, which are discussed as follows:

- (i) Reliability of Beta: Statistically reliable Beta might not exist for shares of many firms. It may not be possible to determine the cost of equity of all firms using CAPM. All shortcomings that apply to Beta value applies to CAPM too.
- (ii) Other Risks: By emphasizing on systematic risk only, unsystematic risks are of importance to share holders who do not possess a diversified portfolio.
- (iii) Information Available: It is extremely difficult to obtain important information on risk free interest rate and expected return on market portfolio as there is multiple risk free rates for one while for another, markets being volatile it varies over time period.

Total Marks = 4

3. (a)

Particulars	
(a) Amount invested by Mr. Optimistic as on 01/04/2016	₹ 16,00,000
(b) Gain during 5 years (16,00,000 x 17.5% x 5 years)	₹ 14,00,000
(c) Value of investment as on 31/03/2021 (a + b)	₹ 30,00,000
(d) NAV as on 31/03/2021	₹ 100 per Unit
(e) Total number of units as on 31/03/2021 (c / d)	30000 Units
Total units before second bonus = 30,000 x 4/5	24000 Units
Total units before first bonus = 24,000 x 5/6	20000 Units
NAV as on 01/04/2016 = 16,00,000/ 20000	₹ 80 per Unit

Total Marks = 8

- (b) (i) Since Hari holds 100 equity shares, he should buy equal no. of Put option i.e. 100 put options in the same stock to hedge his position.

Total Premium amount to be paid = 5 x 100 Put = ₹ 500

- (ii) Net Position after 2-months

	(₹)				
Share price on exercise day	200	210	220	230	240
Option exercise	Yes	Yes	No	No	No
Inflow (strike price)	220	220	Nil	Nil	Nil
Inflow (in open market)	-	-	220	230	240
Less outflow (premium)	5	5	5	5	5
Position (per share)	215	215	215	225	235
Total Position	21500	21500	21500	22500	23500

Thus, from above table it can be observed in any case the value of holding of Hari in VCC Ltd. shall not go below ₹ 215 per share.

Total Marks = 8

- (c) In order to be sustainable, an organisation must:

- ❖ have a clear strategic direction;
- ❖ be able to scan its environment or context to identify opportunities for its work;
- ❖ be able to attract, manage and retain competent staff;

- ❖ have an adequate administrative and financial infrastructure;
- ❖ be able to demonstrate its effectiveness and impact in order to leverage further resources; and
- ❖ get community support for, and involvement in its work.

To be financially sustainable, an organisation must:

- ❖ have more than one source of income;
- ❖ have more than one way of generating income;
- ❖ do strategic, action and financial planning regularly;
- ❖ have adequate financial systems;
- ❖ have a good public image;
- ❖ be clear about its values (value clarity); and
- ❖ have financial autonomy.

Total Marks = 4

4. (a) (i) The No. of share on Conversion shall be computed as follows:

$$\text{Conversion Parity Price} = \frac{\text{Bond Price}}{\text{No. of shares on Conversion}}$$

$$₹ 53 = \frac{1060}{\text{No. of shares on Conversion}}$$

Accordingly, No. of shares on Conversion = 20

- (ii) To determine current Market Price Per Share of A Ltd. we shall use Conversion Premium as follows:

$$\text{Conversion Premium} = \frac{\text{Market Price of Bond} - \text{Conversion Value of Bond}}{\text{Conversion Value of Bond}}$$

$$0.1041667 = \frac{1060 - \text{Conversion Value of Bond}}{\text{Conversion Value of Bond}}$$

Conversion Value of Bond = ₹ 960

Since the No. of share on Conversion = 20

The current market price of share of A Ltd. shall be = ₹ 960 / 20 = ₹ 48 per share

- (iii) To determine the Straight Value of Bond we shall use Percentage of Downside Risk as follows:

$$\text{Percentage of Downside Risk} = \frac{\text{Market Price of Bond} - \text{Straight Value of Bond}}{\text{Straight Value of Bond}}$$

$$0.12766 = \frac{1060 - \text{Straight Value of Bond}}{\text{Straight Value of Bond}}$$

Straight Value of Bond = ₹ 940 per Bond

Total Marks = 6

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

Position of Inflow under three currencies will be as follows:

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

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

Position of outflow under three currencies will be as follows:

Currency	Invoice at Spot Rate	Expected Rate after 6-months	Conversion in INR after 6-months
\$	₹ 50,00,000/ ₹ 67.20 = \$ 74404.762	₹ 67.20 (1 + 0.07/2) = ₹ 69.55	₹ 69.55 x \$ 74404.762 = ₹ 51,74,851
€	₹ 50,00,000/ ₹ 63.20 = € 79,113.924	₹ 63.20 (1 + 0.06/2) = ₹ 65.10	₹ 65.10 x € 79,113.924 = ₹ 51,50,316
£	₹ 50,00,000/ ₹ 88.75 = £ 56,338.028	₹ 88.75 (1 + 0.05/2) = ₹ 90.97	₹ 90.97 x £ 56,338.028 = ₹ 51,25,070

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

Total Marks = 10

- (c) There are a number of different mathematical formulae, or models, that are designed to compute the fair value of an option. You simply input all the variables (stock price, time, interest rates, dividends and future volatility), and you get an answer that tells you what an option should be worth. Here are the general effects the variables have on an option's price:

- (i) *Price Movement of the Underlying:* The value of calls and puts are affected by changes in the underlying stock price in a relatively straightforward manner. When the stock price goes up, calls should gain in value and puts should decrease. Put options should increase in value and calls should drop as the stock price falls.
- (ii) *Time till expiry:* The option's future expiry, at which time it may become worthless, is an important and key factor of every option strategy. Ultimately, time can determine whether your option trading decisions are profitable. To make money in options over the long term, you need to understand the impact of time on stock and option positions.

With stocks, time is a trader's ally as the stocks of quality companies tend to rise over long periods of time. But time is the enemy of the options buyer. If days pass without any significant change in the stock price, there is a decline in the value of the option. Also, the value of an option declines more rapidly as the option approaches the expiration day. That is good news for the option seller, who tries to benefit from time decay, especially during that final month when it occurs most rapidly.

- (iii) *Volatility in Stock Prices:* Volatility can be understood via a measure called Statistical (sometimes called historical) Volatility, or SV for short. SV is a statistical measure of the past price movements of the stock; it tells you how volatile the stock has actually been over a given period of time.
- (iv) *Interest Rate-* Another feature which affects the value of an Option is the time value of money. The greater the interest rates, the present value of the future exercise price are less.
- Total Marks = 4**

5. (a) (i) Under Buy and Hold Strategy

$$(1) \text{ Maximum decline in one month} = \frac{5326 - 4793.40}{5326} \times 100 = 10\%$$

$$\text{Floor Value} = 3,00,000 \times (1 - 0.10) = ₹ 2,70,000$$

Under this strategy investor invests an amount equal to floor value in non-fluctuating assets (Bonds). Thus, Indira will invest ₹ 2,70,000 in Bonds and the remaining ₹ 30,000 in equity.

(2) After 10 days

Value of equity = $30,000 \times 5122.96/5326$	=	₹ 28,856
Value of Bonds		<u>₹ 2,70,000</u>
Total value of portfolio	=	<u>₹ 2,98,856</u>

(3) After another 10 days

Value of equity = $28,856 \times 5539.04/5122.96$	=	₹ 31,200
Value of Bonds		<u>₹ 2,70,000</u>
Total value of portfolio	=	<u>₹ 3,01,200</u>

(ii) Under CPPI

(1) Immediately to start with

$$\begin{aligned} \text{Investment in equity} &= \text{Multiplier} \times (\text{Portfolio value} - \text{Floor value}) \\ &= 2 (3,00,000 - 2,70,000) = ₹ 60,000 \end{aligned}$$

Indira may invest ₹ 60,000 in equity and balance in bonds.

(2) After 10 days

Value of equity = $60,000 \times 5122.96/5326$	=	₹ 57,713
Value of bonds	=	<u>₹ 2,40,000</u>
Total value of portfolio	=	<u>₹ 2,97,713</u>

$$\text{Change in Investment (\%)} = \frac{(60,000 - 57,713)}{60,000} = 3.81\%$$

As the change in investment is less than 5%, Indira will not rebalance the portfolio.

(3) After another 10 days

Value of equity = $57,713 \times 5539.04/5122.96$	=	₹ 62,400
Value of bonds	=	<u>₹ 2,40,000</u>
Total value of portfolio	=	<u>₹ 3,02,000</u>

$$\text{Change in Investment (\%)} = \frac{(62,400 - 57,713)}{57,713} = 8.12\%$$

As the change in investment is more than 5%, Indira will rebalance the portfolio.

Investment in equity = Multiplier x (Portfolio value – Floor value)

$$= 2 (3,02,400 - 2,70,000) = ₹ 64,800$$

Revised Portfolio:

$$\text{Equity} = ₹ 64,800$$

$$\text{Bonds} = ₹ 3,02,400 - ₹ 64,800 = ₹ 2,37,600$$

The investor should off-load ₹ 2,400 of bonds and divert to Equity.

(iii) Under Constant Ratio Strategy

(1) The ratio to be maintained is given as 60:40. Thus, Indira will invest ₹ 1,80,000 in equity and ₹ 120,000 in bonds.

(2) After 10 days

$$\text{Value of equity} = 1,80,000 \times 5122.96/5326 = ₹ 1,73,138$$

$$\text{Value of Bonds} = ₹ 1,20,000$$

$$\text{Total value of portfolio} = ₹ 2,93,138$$

$$\text{Change in Investment (\%)} = \frac{(1,80,000 - 1,73,138)}{1,80,000} = 3.81\%$$

As the change in investment is less than 5%, Indira will not rebalance the portfolio.

(3) After another 10 days

$$\text{Value of equity} = 1,73,138 \times 5539.04/5122.96 = ₹ 1,87,200$$

$$\text{Value of Bonds} = ₹ 1,20,000$$

$$\text{Total value of portfolio} = ₹ 3,07,200$$

$$\text{Change in Investment (\%)} = \frac{(1,87,200 - 1,73,138)}{1,73,138} = 8.12\%$$

As the change in investment is more than 5%, Indira will rebalance the portfolio.

Revised Portfolio:

$$\text{Equity} = \frac{60}{60 + 40} \times 3,07,200 = ₹ 1,84,320$$

$$\text{Bonds} = ₹ 3,07,200 - ₹ 1,84,320 = ₹ 1,22,880$$

The investor should off-load ₹ 2,880 of Equity and divert to Bonds.

Total Marks = 10

(b) First the contract will be cancelled at TT Selling Rate

USD/ Rupee Spot Selling Rate	₹ 49.4455	
Add: Premium for April	₹ 0.4200	
	₹ 49.8655	
Add: Exchange Margin @ 0.10%	₹ 0.04987	
	₹ 49.91537	Or 49.9154
USD/ Sw. Fcs One Month Buying Rate	Sw. Fcs. 1.5150	
Sw. Fcs. Spot Selling Rate	₹ 32.9474	
(₹49.91537/1.5150)		
Rounded Off	₹ 32.9475	
Bank buys Sw. Fcs. Under original contract	₹ 32.4000	
Bank Sells under Cancellation	₹ 32.9475	
Difference payable by customer	₹ 00.5475	

Exchange difference of Sw. Fcs. 1,00,000 payable by customer ₹ 54,750 (Sw. Fcs. 1,00,000 x ₹ 0.5475)

Total Marks = 6

(c) **Peer-to-peer lending:** In this process group of people come together and lend money to each other. Peer to peer 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

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.

Total Marks = 4

6. (a) (i) **Net asset value**

H Ltd.	$\frac{₹ 1300 \text{ Crores} - ₹ 300 \text{ Crores}}{3.50 \text{ Crores}} = ₹ 285.71$
B Ltd.	$\frac{₹ 31.50 \text{ Crores}}{0.65 \text{ Crores}} = ₹ 48.46$

(ii) **Earning capitalization value**

H Ltd.	$\frac{₹ 300 \text{ Crores} / 0.08}{3.50 \text{ Crores}} = ₹ 1071.43^*$
B Ltd.	$\frac{₹ 10 \text{ Crores} / 0.08}{0.65 \text{ Crores}} = ₹ 192.31$

* Alternatively, Contingent Liability can also be deducted from this Valuation.

(iii) **Fair value**

H Ltd.	$\frac{₹ 285.71 \times 1 + ₹ 1071.43 \times 3}{4} = ₹ 875$
B Ltd.	$\frac{₹ 48.46 \times 1 + ₹ 192.31 \times 3}{4} = ₹ 156.3475$

Exchange ratio ₹156.3475/ ₹875 = 0.1787

H Ltd should issue its 0.1787 share for each share of B Ltd.

Note: In above solution it has been assumed that the contingent liability will materialize at its full amount. **Total Marks = 8**

(b)

Day	Principal (₹)	MIBOR (%)	Interest (₹)
Tuesday	10,00,00,000	7.75	21,233
Wednesday	10,00,21,233	8.15	22,334
Thursday	10,00,43,567	8.12	22,256
Friday	10,00,65,823	7.95	21,795
Saturday & Sunday (*)	10,00,87,618	7.98	43,764
Monday	10,01,31,382	8.15	<u>22,358</u>
Total Interest @ Floating			1,53,740
Less: Net Received			<u>317</u>
Expected Interest @ fixed			<u>1,53,423</u>
Thus Fixed Rate of Interest			0.07999914
Approx.			8%

(*) i.e. interest for two days.

Note: Alternatively, answer can also be calculated on the basis of 360 days in a year.

Total Marks = 8

(c) **Characteristics of Venture Capital Financing**

- Long time horizon:** The fund would invest with a long time horizon in mind. Minimum period of investment would be 3 years and maximum period can be 10 years.
- Lack of liquidity:** When VC invests, it takes into account the liquidity factor. It assumes that there would be less liquidity on the equity it gets and accordingly it would be investing in that format. They adjust this liquidity premium against the price and required return.
- High Risk:** VC would not hesitate to take risk. It works on principle of high risk and high return. So, high risk would not eliminate the investment choice for a venture capital.
- Equity Participation:** Most of the time, VC would be investing in the form of equity of a company. This would help the VC participate in the management and help the company grow. Besides, a lot of board decisions can be supervised by the VC if they participate in the equity of a company.

Total Marks = 4