MOCK TEST PAPER 1

FINAL (NEW) COURSE: GROUP – I

PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT (NEW COURSE)

SUGGESTED ANSWERS/HINTS

1. (a) (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	₹ 73.1575
Less: Exchange Margin @ 0.10%	₹ 0.0732
	₹ 73.0843
Rounded off to	₹ 73.0850

(ii) Amount payable on $ 1,00,000

Bank sells $1,00,000 @ ₹ 73.8775	₹ 73,87,750
Bank buys $1,00,000 @ ₹ 73.0850	₹ 73,08,500
Amount payable by customer	₹ 79,250

(iii) Swap Loss

On 4th April, the bank does a swap sale of $ at market buying rate of ₹ 73.4275 and forward purchase for April at market selling rate of ₹ 73.2775.

Bank buys at	₹ 73.4275
Bank sells at	₹ 73.2775
Amount payable by customer	₹ 0.1500

Swap Loss for $ 1,00,000 in ₹ = ₹ 15,000

(iv) Interest on Outlay of Funds

On 4th April, the bank receives delivery under cover contract at ₹ 73.7575 and sell spot at ₹ 73.2775.

Bank buys at	₹ 73.7575
Bank sells at	₹ 73.2775
Amount payable by customer	₹ 0.4800

Outlay for $ 1,00,000 in ₹ 48,000

Interest on ₹ 48,000 @ 12% for 3 days   ₹ 47

(v) New Contract Rate

The contract will be extended at current rate

$/ ₹ Market forward selling Rate for June	₹ 74.0525
Add: Exchange Margin @ 0.10%	₹ 0.0741
	₹ 74.1266
Rounded off to	₹ 74.1275

(vi) Total Cost

Cancellation Charges	₹ 79,250.00
Swap Loss	₹ 15,000.00
Interest	₹ 47.00
	₹ 94,297.00

Total Marks = 10

(b) **(i)** The difference in yield curve may due to the lower credit rating of ABC Ltd. compared to XYZ Ltd.

(ii) DEF Bank will fix interest rate for 2V3 FRA after 2 years as follows:

<u>XYZ Ltd.</u>

$(1+r)(1+0.0420)^2 = (1+0.0448)^3$

$(1+r)(1.0420)^2 = (1.0448)^3$

$r = 5.04\%$

Bank will quote 5.04% for a 2V3 FRA.

<u>ABC Ltd.</u>

$(1+r)(1+0.0548)^2 = (1+0.0578)^3$

$(1+r)(1.0548)^2 = (1.0578)^3$

$r = 6.38\%$

Bank will quote 6.38% for a 2V3 FRA.

(iii) Interest payable by XYZ Ltd. under two scenarios will be computed as follows:

		4.50% - Allow to Lapse	5.50%- Exercise
Interest	₹ 100 crores X 4.50%	₹ 4.50 crores	-
	₹ 100 crores X 5.04%*	-	₹ 5.04 crores
Premium (Cost of Option)	₹ 100 crores X 0.1%	₹ <u>0.10 crores</u>	₹ <u>0.10 crores</u>
		<u>4.60 crores</u>	<u>5.14 crores</u>

* Since after 2 years 1 year interest rate turned out to be 5.50%, it will be beneficial for XYZ Ltd. to exercise its option.

Total Marks = 6

(c) The financial risk can be evaluated from different point of views as follows:

(i) From stakeholder's point of view: Major stakeholders of a business are equity shareholders and they view financial gearing i.e. ratio of debt in capital structure of company as risk since in event of winding up of a company they will be least prioritized.

Even for a lender, existing gearing is also a risk since company having high gearing faces more risk in default of payment of interest and principal repayment.

(ii) From Company's point of view: From company's point of view if a company borrows excessively or lend to someone who defaults, then it can be forced to go into liquidation.

(iii) From Government's point of view: From Government's point of view, the financial risk can be viewed as failure of any bank or (like Lehman Brothers) down grading of any financial

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institution leading to spread of distrust among society at large. Even this risk also includes willful defaulters. This can also be extended to sovereign debt crisis.   **Total Marks = 4**

2. **(a)** **Working Notes:**

(i) Price/share of PQ Ltd. for determination of number of shares to be issued

= (₹ 855 + ₹ 645)/2 = ₹ 750

(ii) Value of LM Ltd based on future cash flow capitalization

Year ended	₹ lakhs	PVF	PV in ₹ lakhs
31.3.22	157.50	0.926	145.845
31.3.23	180.00	0.857	154.260
31.3.24	187.50	0.794	148.875
31.3.25	180.00	0.735	132.300
31.3.26	150.00	0.681	102.150
Terminal Value estimate	300.00	0.681	204.300
Total			887.730

Value of LM Ltd based on net assets	₹ lakhs	375.00
Average value (887.730 + 375)/2	₹ lakhs	631.365
No. of shares in PQ Ltd to be issued ₹ 6,31,36,500/750	Nos.	84182
Basis of allocation of shares		
Fully paid equivalent shares in LM Ltd. (30 + 7.50) lakhs		3750000
Distribution to fully paid shareholders 84182 x 30/37.50		67346
Distribution to partly paid shareholders 84182 – 67346		16836

Total Marks = 10

(b)

Qtrs.	Sensex	Sensex Return (%)	Amount Payable (₹ Crore)	Fixed Return (Receivable) (₹ Crore)	Net (₹ Crore)
(1)	(2)	(3)	(4)	(5)	(5) – (4)
0	43,200	-		-	
1	43,720	1.2037	9.6296	9.2000	- 0.4296
2	43,560	-0.3660	-2.9280	9.2000	12.1280
3	44,160	1.3774	11.0192	9.2000	- 1.8192
4	43,920	-0.5435	-4.3480	9.2000	13.5480

Total Marks = 6

(c) To some extent it can be said that MVA is an attempt to resolve some of the issues involved in EVA e.g. ignoring Value Drivers, Book Value etc. Though MVA itself does not give any basis of share valuation but an alternative way to gauge performance efficiencies of an enterprise, albeit from a market capitalization point of view, the logic being that the market will discount the efforts taken by the management fairly. Hence, the MVA can be perceived as true value added by the market. In contrast, EVA is a derived value added that is for the more discerning investor.

Since MVA represents market views regarding company's future value generation companies with a higher MVA will naturally become the darlings of the share market and would eventually become 'pricey' from a pure pricing perspective. In such cases, the EVA may also sometimes have a slightly negative correlation as compared to MVA. But this will be a short term phenomenon as eventually the gap will get closed by investors themselves. A stock going ex-dividend will exhibit such propensities.

Thus we can conclude that the main objective of EVA is thus to show management efficiency in generating returns over and above the hurdle rate of invested capital.

Total Marks = 4

3. (a) (i) No. of Bonus Shares to be issued:

Free Float Capitalization	= ₹ 45 crore
Market Price Per Share	= ₹ 150
Shares of Minority	= $\dfrac{₹\,45\,crore}{₹150}$ = 30 lacs
Minority Share Holding (100% - 80%)	= 20%
Hence Total shares	= $\dfrac{30\,lacs}{0.20}$ = 150 lacs
Promoters holding 80%,	= 120 lacs shares

Shares remains the same, but holding % to be taken as 75%

Hence Total shares	= $\dfrac{120\,\,lacs}{0.75}$ = 160 lacs
Shares of Minority	= 160 lacs – 120 lacs = 40 lacs

Bonus 10 lacs for 30 lacs i.e. 1 shares for 3 shares held.

(ii) Market price after Bonus issue:

Let us compute PE with given k_e as follows:

$$PE = \frac{1}{k_e} = \frac{1}{0.20} = 5$$

Market Price Given = ₹ 150

Hence EPS will be (₹ 150/5) = ₹ 30

Total No. of shares before bonus issue = 150 lacs

Accordingly, Total PAT shall be (₹ 30 x 150 lacs) = ₹ 4500 lacs

Total No. of shares after bonus issue = 150 lacs + 10 lacs = 160 lacs

EPS after Bonus Issue = ₹ 4500 lacs/ 160 lacs = ₹ 28.13

Market Price After Bonus Issue = ₹ 28.13 x 5 = ₹ 140.65

(iii) Free Float Capitalization after Bonus Issue

₹ 140.65 x 40 lacs = ₹ 5,626 lacs i.e. ₹ 56.26 crore

Total Marks = 8

(b) D_1 = ₹ 6

D_2 = ₹ 6 (1.18) = ₹ 7.08

D_3 = ₹ 6 (1.18)^2 = ₹ 8.35

$D_4 = ₹ 6 (1.18)^3 = ₹ 9.86$

$D_5 = ₹ 9.86 (1.17) = ₹ 11.54$

$D_6 = ₹ 9.86 (1.17)(1.16) = ₹ 13.38$

$D_7 = ₹ 9.86 (1.17)(1.16)(1.15) = ₹ 15.39$

$D_8 = ₹ 9.86 (1.17)(1.16)(1.15)(1.14) = ₹ 17.54$

$$P = \frac{D_1}{(1+k_e)} + \frac{D_2}{(1+k_e)^2} + + \frac{D_3}{(1+k_e)^3} + + \frac{D_4}{(1+k_e)^4} + \frac{D_5}{(1+k_e)^5} + \frac{D_6}{(1+k_e)^6} + \frac{D_7}{(1+k_e)^7} + \frac{TV}{(1+k_e)^7}$$

$$TV = \frac{D_8}{k_e - g} = \frac{17.54}{0.18 - 0.14} = ₹ 438.50$$

$$P = \frac{6.00}{(1+0.18)} + \frac{7.08}{(1+0.18)^2} + \frac{8.35}{(1+0.18)^3} + \frac{9.86}{(1+0.18)^4} + \frac{11.54}{(1+0.18)^5} + \frac{13.38}{(1+0.18)^6} + \frac{15.39}{(1+0.18)^7} + \frac{438.50}{(1+0.18)^7}$$

= 6.00 x 0.847 + 7.08 x 0.718 + 8.35 x 0.609 + 9.86 x 0.516 + 11.54 x 0.437 + 13.38 x 0.370 + 15.39 x 0.314 + 438.50 x 0.314

= ₹ 172.85

Since the Intrinsic Value of share is ₹ 172.85 while it is selling at ₹ 150 hence it is under-priced and better to acquire it.

Total Marks = 8

(c) Although both concepts appear to be same but there are some differences between them. The Internal Growth Rate can be defined as the maximum growth that a firm can achieve from using internal sources of fund i.e. without resorting to external funding. The Sustainable Growth Rate 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.

Total Marks = 4

4. (a) **Profit as per Spot Rates**

	₹
Sales Revenue (US$ 200 X 200 X ₹ 65)	26,00,000
Less: Cost of Imported Raw Material (200 X $\frac{6000}{115}$ X ₹ 66)	6,88,696
Labour Cost (200 X ₹ 1,300)	2,60,000
Variable Overheads (200 X ₹ 650)	1,30,000
Profit	15,21,304

Profit as per expected Spot Rates

	₹
Sales Revenue (US$ 200 X 200 X ₹ 68.90)	27,56,000
Less: Cost of Imported Raw Material (200 X $\frac{6000}{105}$ X ₹ 69.25)	7,91,429

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Labour Cost (200 X ₹ 1,300)	2,60,000
Variable Overheads (200 X ₹ 650)	1,30,000
Profit	15,74,571

Increase/ (Decrease) in Profit due to Transaction Exposure	₹ 53,267
(₹ 15,74,571 – ₹ 15,21,304)	

Total Marks = 6

(b) We have $E_p = W_1E_1 + W_3E_3 + \ldots\ldots\ldots W_nE_n$

and for standard deviation $\sigma^2_p = \displaystyle\sum_{i=1}^{n}\sum_{j=1}^{n} w_iw_j\sigma_{ij}$

$$\sigma^2_p = \sum_{i=1}^{n}\sum_{j=1}^{n} w_iw_j\rho_{ij}\, \sigma_i\, \sigma_j$$

Two asset portfolio

$\sigma^2_p = w^2_1\sigma^2_1 + w^2_2\sigma^2_2 + 2\, w_1w_2\sigma_1\sigma_2\rho_{12}$

Or

$\sigma_p = \sqrt{w_1\sigma_1 + w_2\sigma_2 + 2\, w_1w_2\sigma_1\sigma_2\rho_{12}}$

Substituting the respective values we get,

(i) 50% of funds in each of A and B

$E_p = 0.50 \times 19\% + 0.50 \times 23\% = 21\%$

$\sigma^2_p = (0.50)^2(14\%)^2 + (0.50)^2(18\%)^2 + 2(0.50)(0.50)(0.16)(14\%)(18\%)$

$\sigma^2_p = 49 + 81 + 20.16 = 150.16$

$\sigma_p = 12.25\%$

(ii) 75% in A and 25% in B

$E_p = 0.75 \times 19\% + 0.25 \times 23\% = 20\%$

$\sigma^2_p = (0.75)^2(14\%)^2 + (0.25)^2(18\%)^2 + 2(0.75)(0.25)(0.16)(14\%)(18\%)$

$\sigma^2_p = 110.25 + 20.25 + 15.12 = 145.62$

$\sigma_p = 12.07\%$

(iii) 25% in A and 75% in B

$E_p = 0.25 \times 19\% + 0.75 \times 23\% = 22\%$

$\sigma^2_p = (0.25)^2(14\%)^2 + (0.75)^2(18\%)^2 + 2(0.25)(0.75)(0.16)(14\%)(18\%)$

$\sigma^2_p = 12.25 + 182.25 + 15.12 = 209.62$

$\sigma_p = 14.48\%$

(iv) 60% in A and 40% in B

$E_p = 0.60 \times 19\% + 0.40 \times 23\% = 20.6\%$

$\sigma^2_p = (0.60)^2(14\%)^2 + (0.40)^2(18\%)^2 + 2(0.60)(0.40)(0.16)(14\%)(18\%)$

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$\sigma^2_p = 70.56 + 51.84 + 19.35 = 141.75$

$\sigma_p = 11.91\%$

Portfolio	(i)	(ii)	(iii)	(iv)
Return	21	20	22	20.6
σ	12.25	12.07	14.48	11.91

In the terms of return, we see that portfolio (iii) is the best portfolio.

In terms of risk we see that portfolio (iv) is the best portfolio.

Total Marks = 10

(c) Yes, risk in each stage is different stage of Venture Capital financing and so risk perception and activity to be financed as per indicative Risk matrix is given below:

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

Total Marks = 4

5. (a) (i) $\beta_{asset} = \beta_{equity} \times \dfrac{V_E}{V_0} + B_{debt} \times \dfrac{V_D}{V_0}$

Note: Since β_{debt} is not given it is assumed that company debt capital is virtually riskless.

If company's debt capital is riskless than above relationship become: $\beta_{asset} = \beta_{equity} \dfrac{V_E}{V_0}$

Here $\beta_{equity} = 1.5$

As $\beta_{debt} = 0$

V_E = ₹ 60 lakhs.

V_D = ₹ 40 lakhs.

V_0 = ₹ 100 lakhs.

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$$\beta_{asset} = 1.5 \times \frac{60 \text{ lakhs}}{100 \text{ lakhs}} = 0.9$$

(ii) If only equity is used to finance the expansion, the Cost of Capital for discounting company's expansion of existing business shall be computed as follows:

Company's cost of equity = $R_f + \beta_A \times$ Market Risk premium

Where R_f = Risk free rate of return

β_A = Beta of company assets

Therefore, company's cost of equity = $8\% + 0.9 \times (16 - 8) = 15.20\%$ and overall cost of capital shall be 15.20%.   **Total Marks = 8**

(b) **(i)** IM has overall strong position and hence is in a comparative advantageous position in both rates. However, it has a comparative advantage in floating-rate market.

The differential between the U.S. dollar floating rates is 2.00% per annum, and the differential between the JPY fixed rates is 0.25% per annum. The difference between the differentials is 1.75% per annum. The total potential gain to all parties from the swap is therefore 1.75% per annum, or 175 basis points. If the financial intermediary requires 75 basis points, each of IM and JI can be made 50 basis points better off.

(ii) Since the Net Benefit of 100 Basis Points to be shared equally among IM and JI interest rate for them shall be as follows:

IM

Borrowing from Market	LIBOR + 0.5%
Less: Benefit from Swap	0.5%
Net Interest	LIBOR

JI

Borrowing from Market	4.25%
Less: Benefit from Swap	0.5%
Net Interest	3.75%

Total Marks = 8

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

(i) **Stamp Duty:** Stamp Duty is one of the obstacles 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. **Total Marks = 4**

<p align="center">**OR**</p>

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, a 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 the cost of goods sold from 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 ₹ 5 crore as revenues. Cost of goods sold was ₹ 4 crore. So, the companies made ₹ 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 ₹ 5 crore but the significant part is that cost of goods sold is now ₹ 2 crore 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 revolutionize its business model, which greatly reduces costs. Managers at company A have an additional 40% more in margin to play with than managers at company A. Managers at company A have little room for error and they have to tread carefully.

Total Marks = 4

6. **(a)** **Estimation of Ratios**

Sl. No.	Particulars	SK Ltd.	AS Ltd.	Average
(i)	Market to Book Value	$\left(\dfrac{450}{400}\right)$ = 1.125	$\left(\dfrac{400}{300}\right)$ = 1.333	1.2290
(ii)	Market to Replacement Cost	$\left(\dfrac{450}{600}\right)$ = 0.750	$\left(\dfrac{400}{550}\right)$ = 0.727	0.7385
(iii)	Market to Sales	$\left(\dfrac{450}{550}\right)$ = 0.818	$\left(\dfrac{400}{450}\right)$ = 0.889	0.8535

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(iv)	Market to Net Income	$\left(\dfrac{450}{18}\right) = 25$	$\left(\dfrac{400}{16}\right) = 25$	25

Application of Ratios to XY Ltd.

Sl. No.	Particulars	XY Ltd. (₹)	Average	Indicative Value of XY Ltd. (₹)
(i)	Book Value	250	1.2290	250 x 1.2290 = 307.25
(ii)	Replacement Cost	500	0.7385	500 x 0.7385 = 369.25
(iii)	Sales	500	0.8535	500 x 0.8535 = 426.75
(iv)	Net Income	14	25	14 x 25 = 350.00
Average				₹ 363.31

Value of XY Ltd. according to the comparable method is ₹ 363.31. **Total Marks = 8**

(b) Constant Ratio Plan:

Stock Portfolio NAV (₹)	Value of Conservative Portfolio (₹)	Value of aggressive Portfolio (₹)	Total value of Constant Ratio Plan (₹)	Revaluation Action	Total No. of units in aggressive portfolio
40.00	10,00,000	10,00,000	20,00,000	-	25000
25.00	10,00,000	6,25,000	16,25,000	-	25000
	8,12,500	8,12,500	16,25,000	Buy 7500 units	32500
36.00	8,12,500	11,70,000	19,82,500	-	32500
	9,91,250	9,91,250	19,82,500	Sell 4965.28 units	27534.72
32.00	9,91,250	8,81,111.04	18,72,361.04	-	27534.72
38.00	9,91,250	10,46,319.36	20,37,569.36	-	27534.72
	10,18,784.68	10,18,784.68	20,37,569.36	Sell 724.60 units	26810.12
37.00	10,18,784.68	9,91,974.44	20,10,759.12	-	26810.12
42.00	10,18,784.68	11,26,025.04	21,44,809.72	-	26810.12
43.00	10,18,784.68	11,52,835.16	21,71,619.84	-	26810.12

Hence, the ending value of the mechanical strategy is ₹ 21,71,619.84 and buy & hold strategy is ₹ 21,50,000.

Total Marks = 8

(c) The different methods of evaluating the performance of a Mutual Fund are as follows:

1. **Sharpe Ratio**

The excess return earned over the risk free return on portfolio to the portfolio's total risk measured by the standard deviation. This formula uses the volatility of portfolio return. The Sharpe ratio is often used to rank the risk-adjusted performance of various portfolios over the same time. The higher a Sharpe ratio, the better a portfolio's returns have been relative to the amount of investment risk the investor has taken.

$$S = \frac{\text{Return of portfolio - Return of risk free investment}}{\text{Standard Deviation of Portfolio}}$$

2. **Treynor Ratio**

This ratio is similar to the Sharpe Ratio except it uses Beta of portfolio instead of standard deviation.

Treynor ratio evaluates the performance of a portfolio based on the systematic risk of a fund. Treynor ratio is based on the premise that unsystematic or specific risk can be diversified and hence, only incorporates the systematic risk (beta) to gauge the portfolio's performance.

$$T = \frac{\text{Return of portfolio - Return of risk free investment}}{\text{Beta of Portfolio}}$$

3. **Jensen's Alpha**

The comparison of actual return of the fund with the benchmark portfolio of the same risk. Normally, for the comparison of portfolios of mutual funds this ratio is applied and compared with market return. It shows the comparative risk and reward from the said portfolio. Alpha is the excess of actual return compared with expected return.

Total Marks = 4