MOCK TEST PAPER

FINAL (NEW) COURSE: GROUP – I

PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT (NEW COURSE)

SUGGESTED ANSWERS/HINTS

1. (a) (i) Market value of Companies before Merger

Particulars	RIL	SIL
EPS	₹ 2	Re.1
P/E Ratio	10	5
Market Price Per Share	₹ 20	₹ 5
Equity Shares	10,00,000	10,00,000
Total Market Value	2,00,00,000	50,00,000

(ii) Post Merger Effects on RIL

	₹
Post merger earnings	30,00,000
Exchange Ratio	1:4
No. of equity shares o/s (10,00,000 + 2,50,000)	12,50,000
EPS: 30,00,000/12,50,000	2.4
PE Ratio	10
Market Value 10 x 2.4	24
Total Value (12,50,000 x 24)	3,00,00,000
Gains From Merger:	₹
Post-Merger Market Value of the Firm	3,00,00,000
Less: Pre-Merger Market Value	
RIL 2,00,00,000	
SIL 50,00,000	2,50,00,000
Total gains from Merger	50,00,000

Apportionment of Gains between the Shareholders:

Particulars	RIL (₹)	SIL (₹)
Post Merger Market Value:		
10,00,000 x 24	2,40,00,000	--
2,50,000 x 24	-	60,00,000
Less: Pre-Merger Market Value	2,00,00,000	50,00,000
Gains from Merger:	40,00,000	10,00,000

Thus, the shareholders of both the companies (RIL + SIL) are better off than before

(iii) Post-Merger Earnings:

Increase in Earnings by 20%

New Earnings: ₹ 30,00,000 x (1+0.20) ₹ 36,00,000

No. of equity shares outstanding: 12,50,000

EPS (₹ 36,00,000/12,50,000)	₹ 2.88
PE Ratio	10
Market Price Per Share: = ₹2.88 x 10	₹ 28.80

∴ Shareholders will be better-off than before the merger situation.

(b) Differences between a startup and entrepreneurship

Startups are different from entrepreneurship. The major differences between them have been discussed in the following paragraphs:

(i) Start up is a part of entrepreneurship. Entrepreneurship is a broader concept and it includes a startup firm.

(ii) The main aim of startup is to build a concern, conceptualize the idea which it has developed into a reality and build a product or service. On the other hand, the major objective of an already established entrepreneurship concern is to attain opportunities with regard to the resources they currently control.

(iii) A startup generally does not have a major financial motive whereas an established entrepreneurship concern mainly operates on financial motive.

Priorities and challenges which startups in India are facing

The priority is on bringing more and more smaller firms into existence. So, the focus is on need based, instead of opportunity based entrepreneurship. Moreover, the trend is to encourage self-employment rather than large, scalable concerns.

The main challenge with the startup firms is getting the right talent. And, paucity of skilled workforce can hinder the chances of a startup organization's growth and development. Further, startups had to comply with numerous regulations which escalates it's cost. It leads to further delaying the chances of a breakeven or even earning some amount of profit.

2. (a) (i) To compute perfect hedge we shall compute Hedge Ratio (Δ) as follows:

$$\Delta = \frac{C_1 - C_2}{S_1 - S_2} = \frac{150 - 0}{780 - 480} = \frac{150}{300} = 0.50$$

Mr. Dayal should purchase 0.50 share for every 1 call option.

(ii) Value of Option today

If price of share comes out to be ₹780 then value of purchased share will be:

Sale Proceeds of Investment (0.50 x ₹ 780)	₹ 390
Loss on account of Short Position (₹ 780 – ₹ 630)	₹ 150
	₹ 240

If price of share comes out to be ₹ 480 then value of purchased share will be:

Sale Proceeds of Investment (0.50 x ₹ 480)	₹ 240

Accordingly, Premium say P shall be computed as follows:

(₹ 300 – P) 1.025 = ₹ 240

P = ₹65.85

(iii) Expected Return on the Option

Expected Option Value = (₹ 780 – ₹ 630) × 0.60 + ₹ 0 × 0.40 = ₹ 90

Expected Rate of Return = $\frac{90-65.85}{65.85}\times 100 = 36.67\%$

(b) Final settlement amount shall be computed by using formula:

$$= \frac{(N)(RR-FR)(dtm/DY)}{[1+RR(dtm/DY)]}$$

Where,

N = the notional principal amount of the agreement;

RR = Reference Rate for the maturity specified by the contract prevailing on the contract settlement date;

FR = Agreed-upon Forward Rate; and

dtm = maturity of the forward rate, specified in days (FRA Days)

DY = Day count basis applicable to money market transactions which could be 360 or 365 days.

Accordingly,

If actual rate of interest after 6 months happens to be 9.60%

$$= \frac{(₹60\,crore)(0.096-0.093)(3/12)}{[1+0.096(3/12)]}$$

$$= \frac{(₹60\,crore)(0.00075)}{1.024} = ₹\ 4,39,453$$

Thus banker will pay Parker & Co. a sum of ₹ 4,39,453

If actual rate of interest after 6 months happens to be 8.80%

$$= \frac{(₹60\,crore)(0.088-0.093)(3/12)}{[1+0.088(3/12)]}$$

$$= \frac{(₹60\,crore)(-0.00125)}{1.022} = -₹\ 7,33,855$$

Thus Parker & Co. will pay banker a sum of ₹ 7,33,855

Note: **It might be possible that students may solve the question on basis of days instead of months (as considered in above calculations). Further there may be also possibility that the FRA days and Day Count convention may be taken in various plausible combinations such as 90 days/360 days, 90 days/ 365 days, 91 days/360 days or 91 days/365days.**

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

(a) **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.

(b) **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.

(c) **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 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.

3. (a) (i) To compute the beta of 10th security first we shall compute overall weighted beta as follows:

Let weighted β be w, then

$$5 = \frac{994450}{8767.07 \times 25} \times w$$

w = 1.102 approximately

Let beta of 10th security is β then,

1.102 = 0.90 x 1.10 + 0.10 x β

β = 1.12

(ii) the main reason for the profit in cash position might due to reason that contrary to her expectation fall in the value of cash position there may be increase in value of cash position.

(b) Net Issue Size = $15 million

Gross Issue = $\frac{\$15\,million}{0.98}$ = $15.306 million

Issue Price per GDR in ₹ (300 x 3 x 90%)	₹ 810
Issue Price per GDR in $ (₹ 810/ ₹ 60)	$13.50
Dividend Per GDR (D_1) = ₹ 2* x 3 =	₹ 6

* Assumed to be based on Face Value of ₹ 10 each share.

Net Proceeds Per GDR = ₹ 810 x 0.98 = ₹ 793.80

(a) Number of GDR to be issued

$$\frac{\$15.306\ million}{\$13.50} = 1.1338\ million$$

(b) Cost of GDR to Odessa Ltd.

$$k_e = \frac{6.00}{793.80} + 0.20 = \mathbf{20.76\%}$$

(c) Although there are number of Islamic Finance products, but some of common products/instruments are as follows:

Mudaraba: The Mudaraba is a kind of profit sharing arrangement wherein one party provides 100% of the capital involved and other party provides specialized knowledge and entrusted with exclusive responsibility of working. In case there is profit it shared among them in the pre-decided ratio and if there is loss only financier will borne the same.

Musharaka: It is a kind of joint business venture wherein all parties provide the capital in the business in agreed ratio and also have right to participate in the business. While the loss is strictly shared in the ratio of their capital contribution, the profit is shared as per pre-agreed ratio.

Sukuk: It is one of the most popular Islamic financial products. It is a kind of 'Debt Certificate' representing ownership in business or assets and through this instrument company borrows the money. Although it appears to be conventional debt instruments but is differs in following aspects:

- To have share in profit of assets.
- To have share in the underlying assets on realization of assets.

Ijara: It is a kind of lease financing arrangement wherein one party transfer the asset to other partly for some specific time for specific fee which includes capital cost of assets and profit margin of the lessor. In this arrangement, the responsibility for maintenance of the leased items remains with the lessor.

Murabaha: Also, known as cost plus contract it is a kind of trade credit or loans and mainly helps exporters and importer in meeting their funding requirements. The main feature of this arrangement is that profit margin of the financier is known to the buyer. In this arrangement financier buys thee assets and sells to the client (buyer) and buyer pays to the financier in installments consisting of following two elements:

- Cost of asset financed.
- Financier's profit on acquisition of asset.

Istisna: It is a kind of funding arrangements for long term construction contracts wherein client pays some initial amount and balance amount is payable is repaid in installments. The whole project is funded by the financer and completion of project it is delivered to the client.

Salam: It is analogues to forward contract in the conventional finance. Though cash is received by the seller immediately on sale but goods as per pre-decided quality, quantity and time shall only be delivered in future. This sale shall be at the discounted price so that financer could make some profit out of the deal. However, it is important to note that Salam is prohibited in commodities such a gold, silver and other type of monetary assets.

4. (a) (i) When we make risk-return analysis of different securities from U to Z, we can observe that security U gives a return of 10% at risk level of 5%. Simultaneously securities V and Z give the same return of 10% as of security U, but their risk levels are 6% and 7% respectively. Security X is giving only 5% return for the risk rate of 5%. Hence, security U dominates securities V, X and Z.

Securities W and Y offer more return but it carries higher level of risk.

Hence securities U, W and Y can be selected based on individual preferences.

(ii) In a situation where the perfect positive correlation exists between two securities, their risk and return can be averaged with the proportion.

Assuming the perfect correlation exists between the securities U and W, average risk and return of U and W together for proportion 4 : 1 is calculated as follows:

Risk = $(4 \times 5\% + 1 \times 13\%) \div 5 = 6.6\%$

Return = $(4 \times 10\% + 1 \times 15\%) \div 5 = 11\%$

Therefore:	80% U	100% Y
	20% V	–
Risk	6.6%	6%
Return	11%	11%

When we compare risk of 6.6% and return of 11% with security Y with 6% risk and 11% return, security Y is preferable over the portfolio of securities U and W in proportion of 4 : 1.

(b) Value of share at present = $\frac{D_1}{k_e - g}$

$$= \frac{2(1.06)}{0.08 - 0.06} = ₹\ 106$$

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 3rd 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) The Dow Theory is one of the oldest and most famous technical theories. It was originated by Charles Dow, the founder of Dow Jones Company in late nineteenth century. It is a helpful tool for determining the relative strength of the stock market. It can also be used as a barometer of business.

The Dow Theory is based upon the movements of two indices, constructed by Charles Dow, Dow Jones Industrial Average (DJIA) and Dow Jones Transportation Average (DJTA). These averages reflect the aggregate impact of all kinds of information on the market. The movements of the market are divided into three classifications, all going at the same time; the primary movement, the secondary movement, and the daily fluctuations. The primary movement is the main trend of the market, which lasts from one year to 36 months or longer. This trend is commonly called bear or bull market. The secondary movement of the market is shorter in duration than the primary movement, and is opposite in direction. It lasts from two weeks to a month or more. The daily fluctuations are the narrow movements from day-to-day. These fluctuations are not part of the Dow Theory interpretation of the stock market. However, daily movements must be carefully studied, along with primary and secondary movements, as they go to make up the longer movement in the market.

Thus, the Dow Theory's purpose is to determine where the market is and where is it going, although not how far or high. The theory, in practice, states that if the cyclical swings of the stock market averages are successively higher and the successive lows are higher, then the market trend is up and a bullish market exists. Contrarily, if the successive highs and successive lows are lower, then the direction of the market is down and a bearish market exists.

Charles Dow proposed that the primary uptrend would have three moves up, the first one being caused by accumulation of shares by the far-sighted, knowledgeable investors, the second move would be caused by the arrival of the first reports of good earnings by corporations, and the last move up would be caused by widespread report of financial well-being of corporations. The third stage would also see rampant speculation in the market. Towards the end of the third stage, the far-sighted investors, realizing that the high earnings levels may not be sustained, would start selling, starting the first move down of a downtrend, and as the non-sustainability of high earnings is confirmed, the second move down would be initiated and then the third move down would result from distress selling in the market.

5. (a) (i) Returns for the year

(All changes on a Per Unit Basis)

Change in Price:	₹ 9.45 – ₹8.75 = ₹ 0.70
Dividends received:	₹ 0.75
Capital gains distribution	₹ 0.60
Total reward	₹ 2.05
Holding period reward:	$\frac{₹ 2.05}{₹ 8.75} \times 100 = 23.43\%$

(ii) When all dividends and capital gains distributions are re-invested into additional units of the fund @ (₹ 8.65/unit)

Dividend + Capital Gains per unit

= ₹ 0.75 + ₹ 0.60 = ₹ 1.35

Total received from 300 units = ₹1.35 x 300 = ₹405/-.

Additional Units Acquired

= ₹405/₹8.65 = 46.82 Units.

Total No. of Units = 300 units + 46.82 units = 346.82 units.

Value of 346.82 units held at the end of the year

= 346.82 units x ₹ 9.45 = ₹ 3277.45

Price Paid for 300 Units at the beginning of the year

= 300 units x ₹8.75 = ₹2,625.00

Holding Period Reward

₹ (3277.45 – 2625.00) = ₹652.45

Holding Period Reward = $\frac{₹ 652.45}{₹ 2625.00} \times 100 = 24.85\%$

Conclusion: Since the holding period reward is more in terms of percentage in option-two i.e., reinvestment of distributions at an average NAV of ₹8.65 per unit, this option is preferable.

(b)

Date	1 Sensex	2 EMA for Previous day	3 1-2	4 3×0.062	5 EMA 2 ± 4
6	14522	15000	(478)	(29.636)	14970.364
7	14925	14970.364	(45.364)	(2.812)	14967.55
10	15222	14967.55	254.45	15.776	14983.32
11	16000	14983.32	1016.68	63.034	15046.354
12	16400	15046.354	1353.646	83.926	15130.28
13	17000	15130.28	1869.72	115.922	15246.202
17	18000	15246.202	2753.798	170.735	15416.937

Conclusion – The market is bullish. The market is likely to remain bullish for short term to medium term if other factors remain the same. On the basis of this indicator (EMA) the investors/brokers can take long position.

(c) The contribution of various types of financial markets in economic development has been discussed as below:

(i) Capital Market: Capital market has an important role in India's industrial growth. Capital market is the market where long term debt and equity funds are traded. Industries which require capital on a large scale may tap the capital market. Therefore, the capital market provides the much needed liquidity into the economy and it gives a big boost to the GDP of an economy as it serves as an effective source of allocation of capital to the Industry and Government.

(ii) Money Market: Money market is the market where short-term funds are traded. In simple term, it means that all the financial assets or instruments which can be easily converted into money are traded in this market. The short-term money requirement of the borrowers can be easily met with the funds provided by the money market.

(iii) Foreign Exchange Market: Foreign exchange earned through foreign direct investment in India can be used to remove the poverty and for other productive purposes.

(iv) Derivative Market: The derivatives market is the financial market for derivatives i.e. financial instruments like futures and options, which are derived from other forms of assets. Since all transactions related to derivatives take place in future, it provides individuals with better opportunities because an individual who want to short (sell) some stock for long time can do it only in futures or options hence the biggest benefit of this is that it gives numerous options to an investor or trader to execute all sorts of strategies.

OR

Securitization Instruments

On the basis of different maturity characteristics, the securitized instruments can be divided into following three categories:

(i) Pass Through Certificates (PTCs): As the title suggests originator (seller of the assets) transfers the entire receipt of cash in form of interest or principal repayment from the assets sold. Thus, these securities represent direct claim of the investors on all the assets that has been securitized through SPV.

Since all cash flows are transferred the investors carry proportional beneficial interest in the asset held in the trust by SPV.

It should be noted that since it is a direct route any prepayment of principal is also proportionately distributed among the securities holders. Further, due to these characteristics on completion of securitization by the final payment of assets, all the securities are terminated simultaneously.

Skewness of cash flows occurs in early stage if principals are repaid before the scheduled time.

(ii) Pay Through Security (PTS): As mentioned earlier, since, in PTCs all cash flows are passed to the performance of the securitized assets. To overcome this limitation and limitation to single mature there is another structure i.e. PTS.

In contrast to PTC in PTS, SPV debt securities backed by the assets and hence it can restructure different tranches from varying maturities of receivables.

In other words, this structure permits desynchronization of servicing of securities issued from cash flow generating from the asset. Further, this structure also permits the SPV to reinvest surplus funds for short term as per their requirement.

Since, in Pass Through, all cash flow immediately in PTS in case of early retirement of receivables plus cash can be used for short term yield. This structure also provides the freedom to issue several debt trances with varying maturities.

(iii) Stripped Securities: Stripped Securities are created by dividing the cash flows associated with underlying securities into two or more new securities. Those two securities are as follows:

(i) Interest Only (IO) Securities

(ii) Principle Only (PO) Securities

As each investor receives a combination of principal and interest, it can be stripped into two portions of Interest and Principle.

Accordingly, the holder of IO securities receives only interest while PO security holder receives only principal. Being highly volatile in nature these securities are less preferred by investors. In case yield to maturity in market rises, PO price tends to fall as borrower prefers to postpone the payment on cheaper loans. Whereas if interest rate in market falls, the borrower tends to repay the loans as they prefer to borrow fresh at lower rate of interest. In contrast, value of IO's securities increases when interest rate goes up in the market as more interest is calculated on borrowings.

However, when interest rate due to prepayments of principals, IO's tends to fall. Thus, from the above, it is clear that it is mainly perception of investors that determines the prices of IOs and POs.

6. (a) (i) Working for calculation of WACC

	Orange	Grape	Apple
Total debt	80,000	50,000	20,000
Post tax Cost of debt	10.4%	8.45%	9.75%
Equity Fund	20,000	50,000	80,000

WACC

Orange: (10.4 x 0.8) + (26 x 0.2) = 13.52%

Grape: (8.45 x 0.5) + (22 x 0.5) = 15.225%

Apple: (9.75 x 0.2) + (20 x 0.8) = 17.95%

(ii)

	Orange	Grape	Apple
WACC	13.52	15.225	17.95
EVA [EBIT (1-T) - (WACC x Invested Capital)]	2,730	1,025	-1,700

(iii) Orange would be considered as the best investment since the EVA of the company is highest and its weighted average cost of capital is the lowest

(iv) Estimated Price of each company shares

	Orange	Grape	Apple
EBIT (₹)	25,000	25,000	25,000
Interest (₹)	12,800	6,500	3,000
Taxable Income (₹)	12,200	18,500	22,000
Tax 35% (₹)	4,270	6,475	7,700
Net Income (₹)	7,930	12,025	14,300
Shares	6,100	8,300	10,000
EPS (₹)	1.3	1.448795	1.43
Stock Price (EPS x PE Ratio) (₹)	14.30	15.94	15.73

Since the three entities have different capital structures they would be exposed to different degrees of financial risk. The PE ratio should therefore be adjusted for the risk factor.

Alternative Answer

	Orange	Grape	Apple
Net Income (Given) (₹)	8,970	12,350	14,950
Shares	6,100	8,300	10,000
EPS (₹)	1.4705	1.488	1.495
Stock Price (EPS x PE Ratio) (₹)	16.18	16.37	16.45

(v) Market Capitalisation

Estimated Stock Price (₹)	14.30	15.94	15.73
No. of shares	6,100	8,300	10,000
Estimated Market Cap (₹)	87,230	1,32,302	1,57,300
Alternative Answer			
Estimated Stock Price (₹)	16.18	16.37	16.45
No. of shares	6,100	8,300	10,000
Estimated Market Cap (₹)	98,698	1,35,871	1,64,500

(b) Conversion Price = ₹ 50 x 17 = ₹ 850

Intrinsic Value = ₹ 850

Accordingly the yield (r) on the bond shall be :

₹ 850 = ₹ 100 PVAF (r, 10) + ₹ 1000 PVF (r, 10)

Let us discount the cash flows by 11%

850 = 100 PVAF (11%, 10) + 1000 PVF (11%, 10)

850 = 100 x 5.889 + 1000 x 0.295

= 90.90

Let us discount the cash flows by 11%

850 = 100 PVAF (11%, 10) + 1000 PVF (11%, 10)

850 = 100 x 5.889 + 1000 x 0.352

= 90.90

Now let us discount the cash flows by 13%

850 = 100 PVAF (13%, 10) + 1000 PVF (13%, 10)

850 = 100 x 5.426 + 1000 x 0.295

= -12.40

Accordingly, IRR

$$11\% + \frac{90.90}{90.90 - (-12.40)} \times (13\% - 11\%)$$

$$11\% + \frac{90.90}{103.30} \times (13\% - 11\%)$$

= 12.76%

The spread from comparable bond = 12.76% - 11.80% = 0.96%

(c) In the given case, the exchange rates are indirect. These can be converted into direct rates as follows:

Spot rate

GBP = $\frac{1}{\text{USD}1.5617}$ to $\frac{1}{\text{USD}1.5673}$

USD = GBP 0.64033 - GBP 0.63804

6 months' forward rate

GBP = $\frac{1}{\text{USD}1.5455}$ to $\frac{1}{\text{USD}1.5609}$

USD = GBP 0.64704 - GBP 0.64066

Payoff in 3 alternatives

i. Forward Cover

Amount payable	USD 3,64,897
Forward rate	GBP 0.64704
Payable in GBP	GBP 2,36,103

ii. Money market Cover

Amount payable	USD 3,64,897
PV @ 4.5% for 6 months i.e. $\frac{1}{1.0225} = 0.9779951$	USD 3,56,867
Spot rate purchase	GBP 0.64033
Borrow GBP 3,56,867 x 0.64033	GBP 2,28,512

Interest for 6 months @ 7 %	7,998
Payable after 6 months	GBP 2,36,510

iii. Currency options

Amount payable	USD 3,64,897
Unit in Options contract	GBP 12,500
Value in USD at strike rate of 1.70 (GBP 12,500 x 1.70)	USD 21,250
Number of contracts USD 3,64,897/ USD 21,250	17.17
Exposure covered USD 21,250 x 17	USD 3,61,250
Exposure to be covered by Forward (USD 3,64,897 – USD 3,61,250)	USD 3,647
Options premium 17 x GBP 12,500 x 0.096	USD 20,400
Premium in GBP (USD 20,400 x 0.64033)	GBP 13,063
Total payment in currency option	
Payment under option (17 x 12,500)	GBP 2,12,500
Premium payable	GBP 13,063
Payment for forward cover (USD 3,647 x 0.64704)	GBP 2,360
	GBP 2,27,923

The company should take currency option for hedging the risk.

Note: Even interest on Option Premium can also be considered in the above solution.