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Answer Paper	
Strategic Financial Management	Duration: 180
Details: Full Test	Marks: 100

Instructions:

- All the questions are compulsory
- Properly mention test number and page number on your answer sheet, Try to upload sheets in arranged manner.
- In case of multiple choice questions, mention option number only Working notes are compulsory wherever required in support of your solution
- Do not copy any solution from any material. Attempt as much as you know to fairly judge your performance.

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ANS 1**(a)**

i. Expected shares Price

$$= '120 \times 0.05 + '140 \times 0.20 + '160 \times 0.50 + '180 \times 0.10 + '190 \times 0.15$$

$$= '6 + '28 + '80 + '18 + '28.50 = '160.50$$

ii. Value of Call Option

$$= \text{Rs}150 - \text{Rs}150 = \text{Nil}$$

If the option is held till maturity the expected Value of Call Option

Expected price (X)	Value of call (C)	Probability (P)	CP
120	0	0.05	0
140	0	0.20	0
160	10	0.50	5
180	30	0.10	3
190	40	0.15	6
Total			14

Alternatively, it can also be calculated as follows:

Expected Value of Option

$(120 - 150) \times 0.1$	Not Exercised*
$(140 - 150) \times 0.2$	Not Exercised*

$(160 - 150) \times 0.5$	5
$(180 - 150) \times 0.1$	3
$(190 - 150) \times 0.15$	6
	14

* If the strike price goes below Rs 150, option is not exercised at all

(b) i. Calculation of Overall Cost

Upfront Fee (GBP 10 M @ 1.20%) Rs 1,20,000

Interest Payment (GBP 10 M x 3.55% x 3.4) Rs 12,07,000

Hedging Cost (GBP 10 M x 4% x 3.4) Rs 13,60,000

Total Rs. 26,87,000 Or Rs 2.687 million

Overall cost in % terms on Annual Basis = $2\,687 \times 1 / (1\,00\,00\,000 - 1\,20\,000) \times 3.4 = 8\%$

Overall Cost in Rupee terms@ GBP 1 = Rs 90 x 2.687 x 100 / 3.4 = Rs 711.26 lakhs

OR

Overall cost in % terms on Annual Basis = $2.687 \times 1 / 100\,00\,000 \times 3.4 = 7.9\%$

Overall Cost in Rupee terms@ GBP 1 = 10,000,000 X 7.90% X 90 = Rs 71,100,000

OR

Calculation of overall cost

Interest & Margin (A) = 3.55%

Hedging cost (B) = 4%

7.55%

Onetime fee = 1.20%

Average loan maturity = 3.4 years

Per annum cost 1.2/3.4 (C) = 0.35%

Annual overall cost in % terms (A+B+C) = 7.9%

Overall Cost in Rupee terms@ GBP 1 = 10,000,000 X 7.90% X 90 = Rs 71,100,000

ii. Cost of Hedging in terms of Rupees

Rs 13,60,000 x 90 = Rs 12,24,00,000 = Rs 12.24 crores in Total

OR

GBP10,000,000 X 90 X 4% = Rs 3,60,00,000 on Annual Basis

iii. If K Ltd. pursues an aggressive approach then Gain/Loss in INR Depreciation/ Appreciation shall be computed as follows:

a. If INR depreciates by 10%

Re. loss per GBP = $90 \times 10\% = \text{Rs } 9$

Total Losses GBP10M = Rs 90 Million

Less: Cost of Hedging = Rs 36 Million

Net Loss = Rs 54 million

b. If INR appreciates by 10%

Rs Gains per GBP = $\text{Rs } 90 \times 10\% = \text{Rs } 9$

Total Gain on Repayment of loan = 90 Million

Add: Saving in Cost of Hedging = 36 Million

Net Gain = 126 Million

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

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

The various techniques to manage this type of risk are as follows:

- (i) Carrying out Due Diligence before dealing with any third party.

- (ii) Do not over commit to a single entity or group or connected entities.
- (iii) Know your exposure limits.
- (iv) Review the limits and procedure for credit approval regularly.
- (v) Rapid action in the event of any likelihood of defaults.
- (vi) Use of performance guarantee, insurance or other instruments

ANS 2

(a)

	₹
Present Exchange Rate ₹40 = 1 US\$	
If company purchases US\$ 50,000 forward premium is $50000 \times 39 \times 2\%$	39,000
Interest on ₹39,000 for 9 month at 10%	2,925
Total hedging cost	41,925
If exchange rate is ₹42	
Then gain $(₹42 - ₹39)$ for US\$ 50,000	1,50,000
Less: Hedging cost	41,925
Net gain	1,08,075
If US\$ = ₹38	
Then loss $(39 - 38)$ for US\$ 50,000	50,000
Add: Hedging Cost	41,925

Total Loss	91,925
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(b) (i) NPV for bond refunding

	₹
PV of annual cash flow saving (W.N.2) $(3,49,600 \times \text{PVIFA } 8\% \cdot 25)$ i.e. 10.675	37,31,980
Less: Initial investment (W.N.1)	29,20,000
NPV	8,11,980

Recommendation: Refunding of bond is recommended as NPV is positive.

Working Notes:

1. Initial Investment:

a. Call premium	
Before tax $(1,140 - 1000) - 30,000$	42,00,000
Less tax @ 40%	16,80,000
After tax cost of call prem.	25,20,000
b. Floatation cost	4,00,000
c. Overlapping interest	
Before tax $(0.14 \times 2/12 \times 3 \text{ crore})$	7,00,000
Less tax @ 40%	2,80,000
d. Tax saving on unamortized discount on	
Old bond $25/30 \times 9,00,000 \times 0.4$	(3,00,000)

e. Tax saving from unamortized floatation	
Cost of old bond $25/30 \times 3,60,000 \times 0.4$	(1,20,000)
	29,20,000

(ii) Since the market price at the end of 3 months falls to Rs 360 which is below the exercise price under the call option, the call option will not be exercised. Only put option becomes viable.

	Rs
The gain will be:	
Gain per share (Rs460 – Rs 360)	100
Total gain per 100 shares	10,000
Cost or premium paid (Rs 40 x 100) + (Rs 10 x 100)	5,000
Net gain	5,000

(c) Economic analysis is used to forecast national income with its various components that have a bearing on the concerned industry and the company in particular. Gross national product (GNP) is used to measure national income as it reflects the growth rate in economic activities and has been regarded as a forecasting tool for analyzing the overall economy along with its various components during a particular period.

Some of the techniques used for economic analysis are:

- a. Anticipatory Surveys: They help investors to form an opinion about the future state of the economy. It incorporates expert opinion on construction activities, expenditure on

plant and machinery, levels of inventory – all having a definite bearing on economic activities. Also future spending habits of consumers are taken into account.

In spite of valuable inputs available through this method, it has certain drawbacks:

- (i) Survey results do not guarantee that intentions surveyed would materialize.
- (ii) They are not regarded as forecasts per se, as there can be a consensus approach by the investor for exercising his opinion.

Continuous monitoring of this practice is called for to make this technique popular.

b. Barometer/Indicator Approach: Various indicators are used to find out how the economy shall perform in the future. The indicators have been classified as under:

- (i) Leading Indicators: They lead the economic activity in terms of their outcome. They relate to the time series data of the variables that reach high/low points in advance of economic activity.
- (ii) Roughly Coincidental Indicators: They reach their peaks and troughs at approximately the same in the economy
- (iii) Lagging Indicators: They are time series data of variables that lag behind in their consequences vis-a- vis the economy. They reach their turning points after the economy has reached its own already.

All these approaches suggest direction of change in the aggregate economic activity but nothing about its magnitude. The various measures obtained from such indicators may give conflicting signals about the future direction of the economy. To avoid this limitation, use of diffusion/composite index is suggested whereby combining several indicators into one index to measure the strength/weaknesses in the movement of a particular set of indicators. Computation of diffusion indices is no doubt difficult notwithstanding the fact it does not eliminate irregular movements.

Money supply in the economy also affects investment decisions. Rate of change in money supply in the economy affects GNP, corporate profits, interest rates and stock

prices. Increase in money supply fuels inflation. As investment in stocks is considered as a hedge against inflation, stock prices go up during inflationary period.

- c. Economic Model Building Approach: In this approach, a precise and clear relationship between dependent and independent variables is determined. GNP model building or sectoral analysis is used in practice through the use of national accounting framework. The steps used are as follows:

- (i) Hypothesize total economic demand by measuring total income (GNP) based on political stability, rate of inflation, changes in economic levels.
- (ii) Forecasting the GNP by estimating levels of various components viz. consumption expenditure, gross private domestic investment, government purchases of goods/services, net exports.
- (iii) After forecasting individual components of GNP, add them up to obtain the forecasted GNP.
- (iv) Comparison is made of total GNP thus arrived at with that from an independent agency for the forecast of GNP and then the overall forecast is tested for consistency. This is carried out for ensuring that both the total forecast and the component wise forecast fit together in a reasonable manner

ANS 3 (a)

$$E_0 = 4.5$$

$$D_0 = 1.65$$

$$\text{Payout Ratio} = \frac{1.65}{4.5} \times 100 = 36.67\%$$

$$R_E = R_f + (R_m - R_f)\beta$$

$$= 5.75 + 6 \times 2$$

$$= 17.75\%$$

Stage I - Explicit forecast period (first 5 years)

Years	EPS	DPS	DF@ 17.75%	PV
2006	6.75	2.48	0.8493	2.11
2007	10.135	3.71	0.7212	2.68
2008	15.19	5.57	0.6125	3.41
2009	22.78	8.36	0.5202	4.35
2010	34.17	12.53	0.4418	5.54
				18.09

Stage II - Horizon Period (beyond 5 years)

$$\text{New Re} = 5.75 + 6 \times 1.5$$

$$= 14.75\%$$

$$\text{Earnings in 2011} = 34.17 \times 1.08$$

$$= 36.90$$

$$\text{DPS} = 36.90 \times 85\% = 31.37$$

$$P_{2010} = \frac{D_{2011}}{R_e - g} \frac{31.37}{0.1475 - 0.08} = 404.74$$

$$\text{present value of } P_{2010} = 464.75 \times 0.4419 = 205.32$$

i. Thus, the expected share price of the stock at the end of 2010 = Rs 464.74

ii. Value of the stock using the two stage DDM -

= Stage I + Stage II

= 18.09 + 205.32 = Rs 223.41

(b)

(i)

	Acquire Company	Target Company
Net Profit	₹ 80 lakhs	₹15.75 lakhs
PE Multiple	10.50	10.00
Market Capitalization	₹840 lakhs	₹157.50 lakhs
Market Price	₹42	₹105
No. of Shares	20 lakhs	1.50 lakhs
EPS	₹4	₹10.50

Maximum Exchange Ratio 4: 10.50 or 1: 2.625

Thus, for every one share of Target Company 2.625 share of Acquirer company

(ii) Let x lakhs be the amount paid by Acquirer company to Target Company. Then to maintain same EPS i.e. ₹4 the number of shares to be issued will be:

$$\frac{(80 \text{ lakhs} + 15.75 \text{ lakhs}) - 0.70 \times 15\% \times X}{20 \text{ lakhs}} = 4$$
$$\frac{96.75 - 0.105x}{20} = 4$$

$$X = ₹ 150 \text{ lakhs}$$

Thus, ₹150 lakhs shall be offered in cash to Target Company to maintain same EPS.

(c) Stock index futures is most popular financial derivatives over stock futures due to following reasons:

- It adds flexibility to one's investment portfolio. Institutional investors and other large equity holders prefer the most this instrument in terms of portfolio hedging purpose. The stock systems do not provide this flexibility and hedging.
- It creates the possibility of speculative gains using leverage. Because a relatively small amount of margin money controls a large amount of capital represented in a stock index contract, a small change in the index level might produce a profitable return on one's investment if one is right about the direction of the market. Speculative gains in stock futures are limited but liabilities are greater.
- Stock index futures are the most cost efficient hedging device whereas hedging through individual stock futures is costlier.
- Stock index futures cannot be easily manipulated whereas individual stock price can be exploited more easily.
- Since, stock index futures consists of many securities, so being an average stock, is much less volatile than individual stock price. Further, it implies much lower capital adequacy and margin requirements in comparison of individual stock futures. Risk diversification is possible under stock index future than in stock futures.
- One can sell contracts as readily as one buys them and the amount of margin required is the same.
- In case of individual stocks the outstanding positions are settled normally against physical delivery of shares. In case of stock index futures they are settled in cash all over the world on the premise that index value is safely accepted as the settlement price.

- It is also seen that regulatory complexity is much less in the case of stock index futures in comparison to stock futures.
- It provides hedging or insurance protection for a stock portfolio in a falling market

ANS 4 (a)

i. if investment is made at London

Convert US\$ 5,00,000 at Spot Rate (5,00,000 / 1.5390)		£3,24,886
Add: £ interest for 3 month on £ 324,886 @ 5%		£4,061
		£3,28,947
Less: Amount invested	\$ 5,00,000	
Interest accrued thereon	\$5,000	
	\$5,05,000	
Equivalent amount of £ required to pay the		
Above sum (\$5,05,000 / 1.5430*)		£3,27,285
Arbitrage Profit		£1,662

ii. if investment is made at New York

Gain \$ 5,00,000 (8% - 4%) x 3/12	\$ 5,000
Equivalent amount in £ 3 months (\$5,000 / 1.5475)	£ 3,231

iii. If investment is made at Frankfurt

Convert US\$ 500,000 at Spot Rate (Cross Rate) 1.8260/ 1.5390	€ 1.1865
Euro equivalent US\$ 500,000	€5,93,250
Add: Interest for 3 months @ 3%	€4,449
	€5,97,699
3 month Forward Rate of selling € (1/1.8150)	£ 0.5510
Sell € in Forward Markets € 5,97,699 x £ 0.5510	£3,29,332
Less: Amount invested and interest thereon	£3,27,285
Arbitrage Profit	£2,047

Since out of three options the maximum profit is in case investment is made in New York.
Hence it should be opted

*Due to conservative outlook.

(b)

Free Cash Value of the Company = Free Cash Flow at year end 1 / $K_c - g$

Where K_c = weighted average cost of capital.

Value of the company = 5000 = 200 / $K_c - 5$

$K_c - 5 = 200/5000 = 4\%$

$K_c = 4\% + 5\% = 9\%$

We do not know the weights the analyst had taken for arriving at the cost of capital. Let w be the proportion of equity. Then, $(1-w)$ will be the proportion of debt.

$K_c = 9 = w \times 12 + (1-w) \times 6$

$9 = 6 + 6w$

$6w = 3.$

Hence $w = 3/6 = 0.5 = 50\%$ or 1:1

The weights are equal i.e. 1:1 for equity and debt.

The correct weights should be market value of equity: market value of debts. i.e. 4 times
book value of equity: book value of debts. i.e. 4:1 equity: debt Revised $K_c = 4/5 \times 12 +$
 $1/5 \times 6 = 10.8\%$

Revised value of the company = $200 / 10.8 - 5 = 200 / 5.8\% = 3448.28$ lacks.

(c)

Let the amount to be invested is 1,000 USD	Pounds
Investment in pounds @ one pound = 1.8 dollars: $1,000/1.8$	555.55
No. of securities @ 105 pounds = one security $555.55/105 = 5.29$	
Coupon on security for one year @ 8 pounds per security 5.29×8	42.32
Capital gain @ 5 pounds per security for 5.29 security 5.29×5	26.45
Total pounds had by investor at the end of the year	624.32
Conversion into dollars @ 1.7 dollars per pound 624.32×1.7	1,061.344
Less: Initial investment in dollars	1,000.000
Net gain	61.344
Net gain in % $(61.44/1,000)$	6.13%

If the risk free investment R_f is 5%, an investor can earn this return of 5% by investing in risk free investment. Again if the stock market earns a rate of return R_m which is 15% then an investor investing in stocks constituting the stock market index will earn also 15%. Thus the excess return earned over and above the risk free return is called the risk premium $(R_m - R_f)$ ie $(15\% - 5\%) = 10\%$ which is the reward for undertaking risk, So, if an

investment is as risky as the stock market, the risk premium to be earned is 10%.

If an investment is 30% riskier than the stock market, it would carry risk premium i.e. 30% more than the risk premium of the stock market i.e. $10\% + 30\% \text{ of } 10\% = 10\% + 3\% = 13\%$. β identifies how much more risky is an investment with reference to the stock market. Hence the risk premium that a stock should earn is β times the risk premium from the market $[\beta \times (R_m - R_f)]$. The total return from an investment is the risk free rate of return plus the risk premium. So the required return from a stock would be $R_j = R_f + [\beta \times (R_m - R_f)]$. In the above example $5\% + 1.3 \times (15-5) = 18\%$

The risk premium on a stock varies in direct proportion to its Beta. If the market risk premium is 6% and β of a stock is 1.2 then the risk premium for that stock is 7.2% ($6\% \times 1.2$) where $(R_m - R_f) = 6\%$ and $\beta = 1.2$

ANS 5 (a)

i. Investment committed to each security would be:

	RIL	INFY	TCS	Total
Portfolio Alpha	1,500	2,000	1,500	5,000
Portfolio Beta	600	1,500	900	3,000
Combined Portfolio	2,100	3,500	2,400	8,000
Stock weights	0.26	0.44	0.30	

ii. The equation of critical line takes the following form:

Assume $RIL=a$

$INFY=b$

$$TCS=c$$

$$WB=a+bWA$$

Substituting the values of WA & WB from portfolio Alpha and Beta in above equation, we get

$$0.40 = a + 0.30b, \text{ and}$$

$$0.50 = a + 0.20b$$

Solving above equation we obtain the slope and intercept, $a = 0.70$ and $b = -1$ and thus, the critical line is $WB = 0.70 - WA$

If half of the funds is invested in security, then $WB = 0.70 - 0.50 = 0.20$

Since $WA + WB + WC = 1$ $WC = 1 - 0.50 - 0.20 = 0.30$

\therefore Allocation of funds to security B = $0.20 \times 10,000 = 2,000$, &

Security C = $0.30 \times 10,000 = 3,000$

(b) Spot rate of ₹ 1 against yen = 108 lakhs yen / ₹ 30 lakhs = 3.6 yen

3 month forward rate of Re. 1 against yen = 3.3 yen

Anticipated decline in Exchange rate = 10%

Expected spot rate after 3 months = 3.6 yen – 10% pf 3.6 = 3.6 yen – 0.36 yen = 3.24 yen per rupee

	₹ (in lakh)
Present cost of 108 lakhs yen	30
Cost after 3 months: 108 lakhs yen/ 3.24 yen	33.33

Expected exchange loss	3.33
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If the expected exchange rate risk is hedged by Forward contract:

Present cost	30
Cost after 3 month if forward contract is taken 108 lakhs yen / 3.3 yen	32.73
Expected loss	2.73

Suggestion: if the exchange rate risk is not covered with forward contract, the expected exchange loss is ₹ 3.33 lakhs. This could be reduced to ₹ 2.73 lakhs if it is covered with Forward contract. Hence, taking forward contract is suggested.

(c)

	Amount	Amount	Amount
Opening Bank (150-140-8)	2.00		
Add: Proceeds from sale of securities	47.00	50.50	
Add: Dividend received Deduct:	1.50		
Cost of securities purchased	41.60		
Fund management expenses paid (6.0 -	5.50		
0.5)	1.80	50.10	

Capital gains distributed = 80% of (47.00 – 44.75)	1.20		0.40
Dividend distributed =80% of 1.5 Closing Bank			<u>147.85</u>
Closing market value of portfolio			148.25
			<u>0.50</u>
			147.75
			15.00
Less: Arrears of expenses			9.85
Closing Net Assets			
Number of units (Lakhs)			
Closing NAV per unit			

Rate of Earning

	Amount
Income received (1.8+1.2)/15	0.20
Loss: Loss on disposal (10-9.85)	0.15
Net earning	0.05
Initial investment	10.00
Rate of earning (monthly)	0.5%
Rate of earning (Annual)	6%

ANS 6 (a)

- i. Mr. Kapoor's position in the two securities is +1.50 in security X and -0.5 in security Y. Hence the portfolio sensitivities to the two factors:-

$$b_{prop. 1} = 1.50 \times 0.75 + (-0.50 \times 1.50) = 0.375$$

$$b_{prop. 2} = 1.50 \times 0.60 + (-0.50 \times 1.10) = 0.35$$

- ii. Mr. Kapoor's current

position: Security X Rs

$$3,00,000 / \text{Rs } 1,00,000 = 3$$

Security Y -Rs 1,00,000 / Rs

$$1,00,000 = -1$$

$$\text{Risk free asset -Rs } 1,00,000 / \text{Rs } 1,00,000 = -1$$

$$b_{prop. 1} = 3.0 \times 0.75 + (-1 \times 1.50) + (-1 \times 0) = 0.75$$

$$b_{prop. 2} = 3.0 \times 0.60 + (-1 \times 1.10) + (-1 \times 0) = 0.70$$

- iii. Expected Return = Risk Free Rate of Return + Risk Premium Let λ_1 and λ_2 are the Value Factor 1 and Factor 2 respectively. Accordingly

$$15 = 10 + 0.75 \lambda_1 + 0.60 \lambda_2$$

$$20 = 10 + 1.50 \lambda_1 + 1.10 \lambda_2$$

On solving equation, the value of λ_1 and λ_2 comes 6.67 and 0 respectively.

Accordingly, the expected risk premium for the factor 2 shall be Zero and whatever be the risk the same shall be on account of factor 1.

Alternatively, the risk premium of Securities X & Y can be calculated as follows:

Security X

$$\text{Total Return} = 15\% \quad \text{Risk Free Return} = 10\% \quad \text{Risk Premium} = 5\%$$

Security Y

Total Return = 20% Risk Free Return = 10% Risk Premium = 10%

(b) i. P/ E RATIO:

	% of holding	No. of Shares
Promoter's Holding	84%	63 Lacs
Minority Holding	16%	12 Lacs
Total Shares	100%	75 Lacs

ii. No. of Bonus Shares to be issue:

Promoters holding 84% = 63 lacs shares

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

Hence total shares = $\frac{63 \text{ lacs}}{75\%} = 84 \text{ lacs}$

Shares of Minority = 84 lacs – 63 lacs = 21 lacs

Bonus 9 lacs for 12 lacs i.e. 3 bonus for 4 held or 0.75 shares for 1 share

i. Market price before & after Bonus:

Before Bonus = ' 160 per share

After Bonus

New EPS = $\frac{4.80 \text{ lacs}}{84 \text{ lacs}} = ' 5.71$

New Market Price (25 x 5.71) = '142.75

ii. Free Float Capitalization is

142.75 lacs = '29.9775 crores

(c) Differences between a start-up 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 start-ups 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 its cost. It leads to further delaying the chances of a breakeven or even earning some amount of profit.