

97 marks

SFM Full Test

①

P1(a)

- (i) Cal. of expected share price at the end of 4 months!:-

Overall performance is outstanding. Your conceptual clarity and approach to solve both are quite good. All the sections are very well solved. Presentation is also good, proper headings are covered. You should attempt 2-3 more full test before the exams. best of luck

$$\begin{array}{ccc}
 \text{Expected} & \text{Prob.} & \text{Expected Price} \\
 120 & 0.05 & 120 \times 0.05 \\
 140 & 0.20 & 140 \times 0.20 \\
 & 0.10 & 160 \times 0.10 \\
 180 & 0.10 & 180 \times 0.10 \\
 190 & 0.15 & 190 \times 0.15 \\
 \hline
 & 1 &
 \end{array}$$

Expected share price at the end of 4 month = £160.50

- (ii) Cal. of value of call option at the end of 4 months, if the exercise price prevails!:-

$$\text{Exercise Price} = 150$$

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

- (iii) In case the options is held to its maturity, what will be the expected value of the call option!:-

Call ($s-x$)

$120-150 < 0$ not exercise

$140-150 < 0$ not exercise

$160-150 > 0$ exercise

$180-150 > 0$ exercise

$190-150 > 0$ exercise

	Value	Prob.	Expected Value of option.
$120-150 < 0$ not exercise	0	0.05	0
$140-150 < 0$ not exercise	0	0.20	0
$160-150 > 0$ exercise	10	0.50	0
$180-150 > 0$ exercise	30	0.10	3
$190-150 > 0$ exercise	40	0.15	6
			14

If the stock price goes below £150, option will not exercise at all.

8 marks

very well attempted

(i) P4(B)
Cal. the overall cost both in percentage & rupee terms on an annual basis! —

~~Upfront Fee (GBP 10m @ 1.20%) = £ 120,000~~

$$\text{Interest Payment} (\checkmark 413 \text{ P10m} \times 3.55\%) \times 3.4) = \cancel{\text{12,07,500}}$$

$$\text{Hedging cost } (\text{9 GBP/10 million} \times 4 \text{ y.} \times 3 \cdot 4) = \cancel{\text{£13,601,050}}$$

Total = ~~\$~~ 26,87,000

WNO! interest \Rightarrow LIBOR + margin of 2.5%

$$1.05\% + 2.5\% = 3.55\%$$

$$\text{Overall cost in \% term on annual Basis} = \frac{26,87,000}{1,00,00,000 - 1,20,000} \times \frac{1}{3.4} = 8\%$$

Overall cost in £ terms @ 4BPL = £ 90

$$\Rightarrow \frac{26,871,500 \times 900}{3,4} = 711,26 \text{ ratchys}$$

(ii) Cost off Hedging in rupees terms:-

Hedging cost GBP 10 million x 4% x 3.4 = 13,60,000

$$\text{In rupees terms} = 13,60,000 \times 90$$

$$= 12,240,000 \text{ m}^3$$

(iii) If K Ltd. wants to raise $\text{Rs } 12,24,00,000$

If we want to pursue an aggressive approach, what could be the net gains/losses for IC 4d. if the INR Remained flat.

(a) If INR depreciates by 10%.

~~Rs 100/- per annum~~

$$\text{Ans per QIBP} = \frac{90 \times 10\%}{\text{Total cost chp.}} = \text{₹ } 9$$

$$\text{Cost of Roads} = \text{£90 million}$$

$$\text{Net Loss} = \underline{\underline{\text{£54 million}}}$$

(b) If INR Appreciated by 10%.

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

Total Gain GBP 10 m = £9

(+) saving in cost of Health = £ 36 million

$$\text{Net gain} = \underline{\underline{126 \text{ million}}}$$

8 marks

**approach and
concept both are
quite good**

P1(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
- (ii) Hostile action undertaken
- (iii) Have become insolvent.
- (iv) Any regulatory restrictions from the government.
- (v) Let down by third party.

4 marks

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

- (i) carrying out due diligence before dealing with any third party.
- (ii) Know your exposure limits.
- (iii) Do not over commit to a single entity or group or connected entities.
- (iv) Review the limits & procedures for credit approval regularly.
- (v) Rapid action in the event of any likelihood of default.
- (vi) Use of performance guarantees, insurance or other instruments.

good

(4)

→ cal. of hedging cost 42(a)

Present exchange rate $\text{€}40 = 1 \text{ US\$}$

If company purchase US \$ 50,000 forward Premium $\text{€}39,000$
 $50,000 \times 39 \times 2\%$

Interest on $\text{€}39,000 \times \frac{9}{12} \times 10\%$. $\text{€}2925$

Total hedging cost 41,925

→ Profit/loss, the firm will make if he hedges its foreign exchange risk.
If Exchange rate is € 42

Then gain ($\text{€}42 - \text{€}39$) for US \$ 50,000 $\text{€}1,500$
 $= 50,000 \times \frac{1}{23}$

(+) Hedging cost

(€ 41,925)
Net gain € 108,075

If exchange rate is € 38

They loss ($\text{€}39 - \text{€}38$) for US \$ 50,000 $\text{€}50,000$

(+) Hedging cost

41,925
Net loss € 91,925

6 marks

understanding is good

Q 2(b)

→ Cal. of net of initial outflow of existing bonds

(i) Outflow due to refund of existing Bonds:-

$$\frac{3,00,00,000}{4,00,000} \times 1140 = ₹ 34,20,000$$

(ii) Inflow due to issue of new Bonds:-

$$(3,00,00,000 - 4,00,000) = ₹ 2,96,00,000$$

(iii) Tax saving on call premium!:-

$$42,00,000 \times 40\% = ₹ 16,80,000$$

(iv) Tax saving on unamortized Floating cost!:-

$$\frac{3,60,000}{30} \times 25 \times 40\% = ₹ 1,20,000$$

(v) Tax saving on Unamortized Discount cost!:-

$$\frac{9,00,000}{30} \times 40\% \times 25 = ₹ 3,00,000$$

(vi) Overlapping of interest!:-

$$(3,00,00,000 \times 14\% \times \frac{2}{12}) (1-0.40) = ₹ 4,20,000$$

Net outflow = ₹ 29,20,000

→ Cal. of annual tax saving in outflows of existing Bonds

= Interest (1 - tax)

$$= 362 \times 14\% (1-0.40) = ₹ 25,20,000$$

Tax saving on floating cost!:-

$$= \frac{3,60,000}{30} \times 40\% = ₹ 4,800$$

Tax saving on discount cost!:-

$$= \frac{9,00,000}{30} \times 40\% = ₹ 12,000$$

$$\text{net outflow} = ₹ 25,03,200$$

New Bonds.

= Interest (1 - tax)

$$= 342 \times 12\% (1-0.40)$$

Tax saving on Floating cost!:-

$$= \frac{4,00,000}{25} \times 40\% = ₹ 6,400$$

$$\text{net outflow} = ₹ 21,53,600$$

Net saving in outflow = ₹ 349,600

calc. of NPV saving by replacing existing Bond with new Bond

Particulars	Year	NPV @ 8%	Amount	Present value
Initial outflow	0	1	(29,20,000)	(29,20,000)
Net saving in outflow	1-25	10.675	349,600	37,131,980
				NPV = + £ 8,1980

6 marks

Decision:-

Since NPV is +ve, recommended to refund of existing Bonds.

very well attempted

P 4(b)(ii)

Since, the market price at the end of 3 months fall to £ 360 which is below the exercise price under the call option, the call option will not be exercised, only put option become ~~not~~ viable.

The gain will be £

Gain per share (£ 460 - £ 360) 100

Total gain per 100 shares 10,000

Cost or premium paid

(40 x 100) + (10 x 100) 5,000

Net Gain = £ 5,000

4 marks

good

$$\begin{array}{r} 46 \\ 12 \cdot 34 \\ \hline 477 \cdot 28 \end{array}$$

The various indicators that can be used to assess the performance of an economy :-

Economic analysis is used to forecast national income with its various components that have a bearing on the concern industry, like company in particular.

Some of the techniques used for economic analysis are :-

- Anticipatory Survey :- They help investors to form an opinion about the future state of the economy.
 - It has certain drawbacks.
 - Survey results do not guarantee that intentions surveys would materialise.
 - They are not regarded as forecasts, as there can be a consensus approach by the investor for exercising his opinion.

(b) Barometer Indicator Approach :- There are various indicators used to find out how the economy shall perform in the future.

- Leading Indicators - They lead to economy activity in term of outcome. They relate to the time series data of the variables that reach high/low points in advance of economy activity.

(ii) Lagging Indicators - They reach their peak & troughs at approximately the same in the economy.

- 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.

(c) Economic model building Approach - A precise & clear relationship between dependent & independent variables is determined. GNP model building or sectoral analysis is used in practice through use of national accounting framework.

3 marks

more explanation needs to add

(P)

93 (a)

(i) cal. of expected price of the stock at end of 2010 :-

$$\begin{aligned} \text{W No. 1} & \quad \text{cal. of } k_e^* \quad 2005-2010 \\ k_e &= R_F + B(R_m - R_F) \\ &= 5.75\% + 2(6\%) \\ &= 17.75\%. \end{aligned}$$

$$\begin{aligned} \text{New } k_e^* - \text{ after 2010} \\ k_e &= R_F + B(R_m - R_F) \\ &= 5.75 + 1.5(6) \\ &= 14.75\%. \end{aligned}$$

$$E_D = 4.5$$

$$D_0 = 1.65$$

$$\begin{aligned} \text{Payout Ratio} &= \frac{1.65}{4.5} \times 100 \\ &= \frac{1.65}{4.5} \times 100 \\ &= 36.67\%. \end{aligned}$$

cal. of explicit forecast period :-

Year	EPS	DPS	DEDDCTE
2005	4.5	1.65	
2006	6.75	2.48	
2007	10.125	3.71	
2008	15.19	5.57	
2009	22.78	8.35	
2010	34.17	12.54	
2011	36.90	31.37	

484

$$g = 15\%$$

$$\text{After } g \text{ 2010} = 8\%.$$

8 marks

Price at 2010

$$\begin{aligned} P_{2010} &= \frac{D_5(1+g)}{1-\delta c} \\ &= \frac{31.37}{(0.1475 - 0.08)} = 464.74 \end{aligned}$$

very well attempted

(ii) cal. the value of stocks using the two stage dividend discount model

$$\begin{aligned} P_0 &= \frac{2.48}{(1+\cancel{0.1775})} + \frac{3.71}{(1+\cancel{0.1775})^2} + \frac{5.57}{(1+\cancel{0.1775})^3} + \frac{8.36}{(1+\cancel{0.1775})^4} + \frac{12.54 + 464.74}{(1+\cancel{0.1775})^5} \\ &\approx \cancel{\$1000.00}/\text{share} \end{aligned}$$

$$= 223.389 \text{ or } \$23.40/\text{share}.$$

P3(b)

(i) Net Profit
P/E

Acquirer company
£ 80,00,000

target company
15.75 lakhs

Market capitalization

10.5

10

Market Price

£ 840 lakhs

£ 157.5 lakhs

No. of shares

£ 42 / share

105

EPS

$$\frac{840}{42} = 20 \text{ lakhs}$$

$$\frac{157.5}{105} = 1.5 \text{ lakhs}$$

$$\frac{80 \text{ lakhs}}{20} = £ 4 / \text{share}$$

$$\frac{15.75 \text{ lakhs}}{1.5} = £ 10.5 / \text{share}$$

Maximum Exchange Ratio = 4 : 10.5

Thus, for every one share of acquirer co.

= 1 : 2.625

one share of target company 2.625 share

(ii) To maintain same EPS = £ 4, the no. shares to be issued -

$$4 = \frac{(80 \text{ lakhs} + 15.75 \text{ lakhs}) - (1 - 0.30)(15\%)x}{20 \text{ lakhs}}$$

$$4 = \frac{95.75 - 0.105x}{20}$$

$$x = 150 \text{ lakhs}$$

Thus, £ 150 lakhs shall be offered in cash to target company to maintain same EPS.

8 marks

The reasons for stock index futures becomes more popular financial derivatives over stock futures segment in India:-

- It provides hedging or insurance protection for a stock portfolio in a falling market.
- Stock index futures are the most cost efficient hedging device whereas hedging through individual stock future is costly.
- Stock index future ~~are~~ cannot be easily manipulated whereas individual stock futures can be exploited more easily.
- It is also seen that regulatory complexity is much less in the case of stock index futures in comparison to stock futures.
- One can sell contracts as readily as one buys them & the amount of margin requires ~~the same~~.
- In case of individual stocks the ~~old~~ 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.

underline keywords

3.5 marks

Q4(9)(i) Invest in London:-Convert US \$ 5,00,000 into £ using SLR

$$\$ 5,00,000 \times \frac{1}{1.5390} \text{ £} = \text{£} 324886.29$$

(+) Interest @ 5% p.a for 3 months:-

$$\text{£} 324886.29 \times 5\% \times \frac{3}{12} = \text{£} 4061.08$$

Total receipt after 3 months
 $\text{£} 324886.29 + \text{£} 4061.08 = \text{£} 328947.37$

(-) equivalent £ required to pay\$ 5,05,000 after 3 months

$$\$ 5,05,000 \times \frac{1}{1.5420} \text{ £} = \text{£} 3,27,284.51$$

$$\text{Net gain} = \underline{\underline{\text{£} 1663.}}$$

(ii) Invest in New York:-Amount received after 3 months:-

$$= \$ 5,00,000 (1 + (0.08 \text{ p.a.}) \times \frac{3}{12}) = \$ 5,05,000$$

(+) Payment:-

$$\$ 5,05,000 (1 + 0.04 \times \frac{3}{12}) = \$ 5,05,000$$

Equivalent £ in 3 months
 $\underline{\underline{\text{Gain} = \$ 5,000}}$

$$= \$ 5,05,000 \times \frac{1}{1.5475} \text{ £}$$

(iii) Invest in Frankfurt:-

$$= \$ 5,00,000 \times \frac{1}{1.1865}$$

$$(1.8260 \times \frac{1}{1.5390} \Rightarrow 1.1865) = \text{£} 593,250$$

(+) Interest @ 3% p.a for 3 months:-

$$\text{£} 593,250 \times 3\% \times \frac{3}{12}$$

$$\text{Total receipt in 3 months} = \underline{\underline{\text{£} 4449.38}}$$

Convert into £ using 3 month F/L :-

$$= \text{£} 597,699.38 \times \frac{1}{1.8150} \text{ £} = 329316.95$$

(1) Amt. required to pay \$50,000 in 3 months P/R

$$\$50,000 \times \frac{1}{1.5430} = \$32,728.45$$

$$\text{Net Gain} = \underline{\underline{\$2026.44}}$$

Decision **8 marks**

We should invest at New York because Net gain is maximum in this case.

The net gain in £ is £3237.

good attempt

P4 (b)

Free cash ~~flow~~ ^{value} of the company = $\frac{\text{Free cash flow at end 1}}{K_C - g_C}$

~~K_C~~ = ?

$$\text{Value of the company} = 5000 = \frac{200}{K_C - 5\%}$$

$$K_C - 5\% = \frac{200}{5000} = 0.04\%.$$

$$K_C = 4\% + 5\%.$$

$$K_C = 9\%.$$

Let weight it

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

$$9 = 12w + 6 - 6w$$

$$9 = 12w + 6$$

$$w = 0.70$$

$$\text{equity} = 0.70$$

$$\text{debt} = \frac{0.30}{0.10} = 3:1$$

8 marks

well attempted

The corrected weights should be market value of equity :
= 4 times Book Value of equity : book value of debt
= 4 : 1 equity debt

$$\begin{aligned} \text{Revised } K_C &= \frac{4}{5} \times 12 + \frac{4}{5} \times 6 \\ &= 10.8\% \end{aligned}$$

0.058

$$\text{Revised value of the company} = \frac{200}{(0.1088 - 0.05)} = \$3448.28 \text{ lacs.}$$

Let the amount to be invested is 1000 USD

$$\text{Investment in £} @ 1 \frac{1}{8} = 1.8 \text{ $}$$

$$\frac{1000 \text{ $}}{1.8} = \text{£ 555.55}$$

No. of securities @ 105 £

$$= \frac{555.55}{105} = 5.29 \text{ £}$$

Coupon on security for 1 yr @ 8% per sec.

$$= 5.29 \times 8$$

$$\text{£ 42.32}$$

Capital gain @ 5% per security = 5.29×5

$$\text{£ 26.45}$$

Total £ had by investor at the end of year

$$\underline{\text{£ 624.32}}$$

converted into \$ @ 1.70

$$= \$ 1.70$$

$$= \$ 624.32 \times 1.7 = \$ 1061.344$$

(i) Initial investment in \$

Net gain in %

$$\text{Net gain} \Rightarrow \frac{61.344}{100} \times 100 = 61.344\%$$

short explanation is missing

2.5 marks

Q5(a)

(i) Investment in 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) Take a step

Let

$$RIL = a$$

$$INFY = b$$

$$TCS = c$$

$$w_B = a + b w_A$$

$$\begin{aligned} 0.40 &= a + 0.30 b \\ 0.30 &= a + 0.20 b \\ \hline -0.10 &= +0.10 b \end{aligned}$$

$$b = -1$$

$$a = 0.70$$

$$w_B = 0.70 - w_A$$

If half of the fund invested in

Since, $w_A + w_B + w_C = 1$ **8 marks****concept is quite good**

$$w_C = 1 - 0.70 - 0.20$$

$$w_C = 0.10$$

$$\begin{aligned} \text{Security C} &= 0.10 \times 10,000 = 2,000 \\ &\quad 0.30 \times 10,000 \times 3,000 \end{aligned}$$

Q5(b)

Spot rate 1 £ against yen = $\frac{108 \text{ lakh yen}}{\text{£} 30 \text{ lakhs}} = 3.6 \text{ yen}$

3 month F/R $\approx 1 = 3.3 \text{ yen}$

decline in exchange rate $= 10\%$.

Expected spot rate after 3 months = $3.6 \text{ yen} - 3.6 \times 10\% = 3.24 \text{ yen}$

Present cost of 108 lakh yen = ₹ 30 lakhs

cost after 3 months

$$\frac{108 \text{ yen}}{3.24 \text{ yen}} = ₹ 33.33 \text{ lakhs}$$

expected exchange rate = $\frac{₹ 3.33}{104}$

If the expected exchange rate risk is hedged by Forward Contract,

present cost

₹ 30 lakhs

cost after 3 months

$$= \frac{108 \text{ yen}}{3.3 \text{ yen}}$$

₹ 32.73 lakhs

Expected cost = ₹ 2.73 lakhs

Decision

If the exchange 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.
 So, taking forward contract is suggested.

6 marks

Q5(c)Calc. of this annual rate of earning :-

£ in lakhs

Particulars

Opening Bank (150 - 140.8)	2
(+) Proceeds from sale of securities.	47
(-) Purchase of other securities	41.60
(-) Fund management expenses (6 - 0.5)	5.50
(+) Dividend earned.	1.5
(-) Capital gain distribution = 80% (47 - 44.75)	1.8

(-) Dividend distributed = 1.5 x 80%	1.2
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closing market value of portfolio

$$\text{Net Value} \Rightarrow \frac{147.85}{148.25}$$

(+) Accrual of expense

$$0.50$$

$$\div \text{No. of units (lakhs)} \quad 147.75$$

closing NAV per unit

$$\frac{15}{147.75} = £9.85$$

Rate of earnings :-**6 marks**Income received ($1.8 + 1.2$) (£ in lakhs)

$$0.20$$

(+) Loss on disposals = $\frac{(16 - 9.85)}{15}$

$$6.15$$

$$0.15$$

Initial Investment

$$0.65$$

Rate of earnings (monthly)

$$10$$

Rate of earning (annually) = 0.5×12

$$= 6\% \text{ p.a.}$$