FINAL – November 2017

STRATEGIC FINANCIAL MANAGEMENT

Test Code – F20
Branch (MULTIPLE) (Date : 31.12.2017)
(50 Marks)

Note: All questions are compulsory.

Question 1 (4 Marks)

Qtrs. (1)	Sensex (2)	Sensex Return (%) (3)	Amount Payable (Rs. Crore) (4)	Fixed Return (Receivable) (Rs. Crore) (5)	Net (Rs. Crore) (5) – (4)
0	21,600	-		-	
1	21,860	1.2037	4.8148	4.6000	- 0.2148
2	21,780	-0.3660	-1.4640	4.6000	6.0640
3	22,080	1.3774	5.5096	4.6000	- 0.9096
4	21,960	-0.5435	-2.1740	4.6000	6.7740

Question 2(5 Marks)

The contract is to be cancelled on 31-10-2015 at the spot buying rate of US$ = ` 60.3200

Less: Margin Money 0.086% = ` 0.0519

= ` 60.2681

2 ½ Marks

Rounded off ` 60.2700

US$ 25,000 @ ` 60.2700 = ` 15,06,750

US$ 25,000 @ ` 61.0000 = ` 15,25,000

The difference in favour of the Bank/Cost to the importer ` 18,250

(ii) The Rate of New Forward Contract

Spot Selling Rate US$ 1 = ` 60.6300

Add: Premium @ 0.98% = ` 0.5942

= ` 61.2242

2 ½ marks

Add: Margin Money 0.15% = ` 0.0918

= ` 61.3160 or ` 61.3175

Question 3(5 Marks)

(a) (i) Swap Points for 2 months and 15 days **(2 marks)**

	Bid	Ask
Swap Points for 2 months (a)	70	90
Swap Points for 3 months (b)	160	186
Swap Points for 30 days (c) = (b) – (a)	90	96
Swap Points for 15 days (d) = (c)/2	45	48
Swap Points for 2 months & 15 days (e) = (a) + (d)	115	138

(ii) Foreign Exchange Rates for 20th June 2016**(1 marks)**

	Bid	Ask
Spot Rate (a)	66.2525	67.5945
Swap Points for 2 months & 15 days (b)	0.0115	0.0138
	66.2640	67.6083

(iii) Annual Rate of Premium**(2 marks)**

	Bid	Ask
Spot Rate (a)	66.2525	67.5945
Foreign Exchange Rates for 20th June 2016 (b)	66.2640	67.6083
Premium (c)	0.0115	0.0138
Total (d) = (a) + (b)	132.5165	135.2028
Average (d) / 2	66.2583	67.6014
Premium	$\frac{0.0115}{66.2583} \times \frac{12}{2.5} \times 100$	$\frac{0.0138}{67.6014} \times \frac{12}{2.5} \times 100$
	= 0.0833%	= 0.0980%

Question 4(6 Marks)

Receipts using a forward contract (6,00,000/0.01458)**(1 mark)**	= `4,11,52,263
Receipts using currency futures(2 marks)	
The number of contracts needed is (6,00,000/0.01449)/30,00,000 = 13.80 say 14 contracts	
Initial margin payable is 14 x ` 16,000 = ` 2,24,000	
On September 1 Close at 0.01462	
Receipts = US$6,00,000/0.01461	= 4,10,67,762
Variation Margin = [(0.01462 – 0.01449) x 14 x 30,00,000/-]/0.01461	
OR (0.00013x14x3000000)/.01461 = 5,460/0.01461	3,73,717
	4,14,41,479
Less: Interest Cost – 2,24,000 x 0.085 x 3/12	`4,760
Net Receipts	` 4,14,36,719
Receipts under different methods of hedging	
Forward contract	`4,11,52,263
Futures	`4,14,36,719
No hedge	
US$ 6,00,000/0.01461**(2 mark)**	` 4,10,67,762
The most advantageous option would have been to hedge with futures.(1 marks)	

Question 5 (6 Marks)

(a) 3 Months Interest rate is 4.50% & 6 Months Interest rate is 5% p.a. (2 marks)

Future Value 6 Months from now is a product of Future Value 3 Months now & 3 Months

Future Value from after 3 Months. (1+0.05*6/12)

=(1+0.045*3/12) x (1+$i_{3,6}$ *3/12) $i_{3,6}$ = [(1+0.05* 6/12) /(1+0.045

*3/12) – 1] *12/3 i.e. 5.44% p.a.

(b) 6 Months Interest rate is 5% p.a. & 12 Month interest rate is

6.5% p.a. (2 marks)

Future value 12 month from now is a product of Future value 6 Months from now and 6

Months Future value from after 6 Months(1+0.065) =

(1+0.05*6/12) x (1+$i_{6,6}$ *6/12) $i_{6,6}$ = [(1+0.065/1.025) – 1]

*12/6

6 Months forward 6 month rate is 7.80% p.a.

The Bank is quoting 6/12 USD FRA at 6.50 – 6.75%

Therefore there is an arbitrage Opportunity of earning interest @ 7.80% p.a. & Paying @ 6.75%

(c) Borrow for 6 months, buy an FRA & invest for 12 months(2 marks)

To get $ 1.065 at the end of 12 months for $ 1 invested today

To pay $ 1.060[#] at the end of 12 months for every $ 1 Borrowed today

Net gain $ 0.005 i.e. risk less profit for every $ borrowed

(1+0.05/2) (1+.0675/2) = (1.05959) say 1.060

Question 6 (8 Marks)

Security	No. of shares (1)	Market Price of Per Share (2)	(1) × (2)	% to total (w)	ß (x)	wx
VSL	10000	50	500000	0.4167	0.9	0.375
CSL	5000	20	100000	0.0833	1	0.083
SML	8000	25	200000	0.1667	1.5	0.250
APL	2000	200	400000	0.3333	1.2	0.400
			1200000	1		1.108

Portfolio beta 1.108 **(2 marks)**

(i) Required Beta 0.8

It should become (0.8 / 1.108) 72.2 % of present portfolio

If ` 12,00,000 is 72.20%, the total portfolio should be

` 12,00,000 × 100/72.20 or ` 16,62,050

Additional investment in zero risk should be (` 16,62,050 – ` 12,00,000) = ` 4,62,050 **(2 marks)**

Revised Portfolio will be

(ii) To increase Beta to 1.2

It should become 1.2 / 1.108 108.30% of present beta

If 1200000 is 108.30%, the total portfolio should be

1200000 × 100/108.30 or 1108033 say 1108030
Additional investment should be (-) 91967 i.e. Divest ` 91970 of Risk Free Asset
(2 marks)

Revised Portfolio will be (4 marks)

Security	No. of shares (1)	Market Price of Per Share (2)	(1) × (2)	% to total (w)	ß (x)	wx
VSL	10000	50	500000	0.4513	0.9	0.406
CSL	5000	20	100000	0.0903	1	0.090
SML	8000	25	200000	0.1805	1.5	0.271
APL	2000	200	400000	0.3610	1.2	0.433
Risk free asset	-9197	10	-91970	-0.0830	0	0
			1108030	1		1.20

Portfolio beta 1.20

Question 7 (8 marks)

A. The basic differences between Cash and the Derivative market are enumerated below: - **4 marks**

(a) In cash market tangible assets are traded whereas in derivative market contracts based on tangible or intangibles assets like index or rates are traded.

(b) In cash market, we can purchase even one share whereas in Futures and Options minimum lots are fixed.

(c) Cash market is more risky than Futures and Options segment because in "Futures and Options" risk is limited.

(d) Cash assets may be meant for consumption or investment. Derivate contracts are for hedging, arbitrage or speculation.

(e) The value of derivative contract is always based on and linked to the underlying security. However, this linkage may not be on point-to-point basis.

(f) In the cash market, a customer must open securities trading account with a securities depository whereas to trade futures a customer must open a future trading account with a derivative broker.

(g) Buying securities in cash market involves putting up all the money upfront whereas buying futures simply involves putting up the margin money.

(h) With the purchase of shares of the company in cash market, the holder becomes part owner of the company. While in future it does not happen.

B. Four separate strategy options are feasible for exposure management. They are: **4 marks**

a. **Low Risk: Low Reward-** This option involves automatic hedging of exposures in the forward market as soon as they arise, irrespective of the attractiveness or otherwise of the forward rate.

b. **Low Risk: Reasonable Reward-** This strategy requires selective hedging of exposures whenever forward rates are attractive but keeping exposures open whenever they are not.

c. **High Risk: Low Reward-** Perhaps the worst strategy is to leave all exposures unhedged.

d. **High Risk: High Reward-** This strategy involves active trading in the currency market through continuous cancellations and re -bookings of forward contracts. With exchange controls relaxed in India in recent times, a few of the larger companies are adopting this strategy.

Question 8 (8 marks)

a.

1. **Forward contract:** Dollar needed in 180 days = £5,00,000 x $ 1.96 = $9,80,000/-

(1 mark)

2. **Money market hedge: Borrow $, convert** to £, invest £, repay $ loan in 180 days
Amount in £ to be invested = 5,00,000/1.045 = £4,78,469

Amount of $ needed to convert into £ = £4,78,469 x $2 = $9,56,938

Interest and principal on $ loan after 180 days = $9,56,938 x 1055 = $10,09,570

(2 marks)

3.

Call option:

Expected Spot rate in 180 days	*Prem. /unit*	*Exercise Option*	*Total price per unit*	*Total price for £5,00,000 xi*	*Prob. Pi*	*pixi*
1.91	0.04	No	1.95	9,75,000	0.30	2,92,500
1.95	0.04	No	1.99	9,95,000	0.50	4,97,500
2.05	0.04	Yes	2.01*	10,05,000	0.20	2,01,000
						9,91,000

(2 ½ marks)

* ($1.97 + $0.04)

Alternatively it can also be computed also

Expected Spot rate in 180 days	*Prem. /unit*	*Exercise Option*	*Total price per unit*	*Total price for £5,00,000 xi*	*Prob. Pi*	*pixi*
1.91	0.04	No	1.95	9,75,000	0.30	2,92,500
1.95	0.04	No	1.99	9,95,000	0.50	4,97,500
2.05	0.04	Yes	2.01*	10,05,000	0.20	2,01,000
						9,91,000
Add: Interest on Premium ($20,000 x 5.5%)						1,100
						9,92,100

(iv) No hedge option:

Expected Future spot rate	*Dollar needed Xi*	*Prob. Pi*	*Pi xi*
1.91	9,55,000	0.30	2,86,500
1.95	9,75,000	0.50	4,87,500
2.05	10,25,000	0.20	2,05,000
			9,79,000

The probability distribution of outcomes for no hedge strategy appears to be most preferable because least number of $ are needed under this option to arrange £5,00,000.

(2 ½ marks)

****