CA Final SFM

CA Mayank Kothari

Analysis & Suggested Answers - Nov 2017 SFM Paper

CHAPTERWISE ANALYSIS

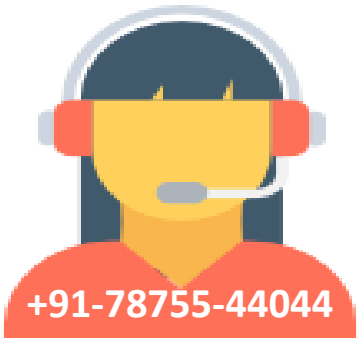
No.	Topics	Marks	%
1	Financial Policy and Corporate Strategy	4	3%
2	Capital Budgeting	8	7%
3	Leasing Decisions	8	7%
4	Dividend Decisions	8	7%
5	**Derivatives**	**21**	**18%**
6	Security Analysis	0	0%
7	Portfolio Management	10	8%
8	Financial Services	0	0%
9	**Mutual Funds**	**17**	**14%**
10	Money Market Instruments	6	5%
11	FDI, FII, IFM	0	0%
12	**Forex**	**18**	**15%**
13	**Mergers & Acquisitions**	**16**	**13%**
14	Other	4	3%
	Grand Total	**120**	**100%**

Facts for the Knowledge

1. 60% of the paper has been asked from Derivatives. Forex, Mutual Funds and Mergers
2. The paper was average
3. Around 90% paper was from ICAI Material only.
4. No questions were asked on Factoring, International Capital Budgeting and

SOURCE OF THE PAPER

Source	Marks	%
Practice Manual	99	83%
Study Material	8	7%
RTP Nov 2017	14	12%
Other	12	10%



Share Knowledge

Share Happiness

Use the link below to watch the Suggested Answers Videos on Nov 2017 Paper of SFM

http://bit.ly/camayankkothariyoutube

For SFM Video Lectures for May 2018 visit

www.conferenza.in

or call

787-55-44044

Contact CA Mayank Kothari on whatsapp at

8983-47-5152

You can ask queries on SFM on the above number

1(a)

$NAV_0 = 8.50$

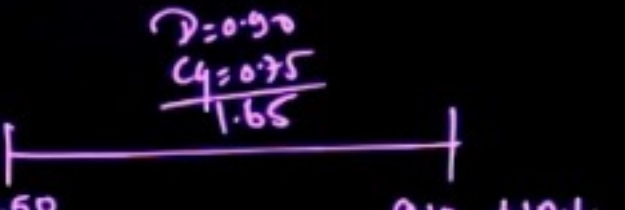
$NAV_1 = 9.10$

1] Holding Period Return

$$HPR = \frac{[NAV_1 - NAV_0] + D + CG}{NAV_0}$$

$$= \frac{[9.10 - 8.50] + 0.90 + 0.75}{8.50}$$

HPR = 26.47%



$N_0 = 200$

-1700

$+330$

-330

8.75

$+37.71$

2377 N_1

$+2163.16$

2] HPR

$$HPR = \frac{[NAV_1 \times N_1] - [NAV_0 \times N_0]}{[NAV_0 \times N_0]}$$

$$= \frac{2163.16 - 1700}{1700}$$

HPR = 27.24%

1(b)

$C = \text{Max}[0, S-K]$

Call
$K = 26000$
$C_0 = 1010$
$t = 3$ months
$r = 3\%$

$S_u = 27300$ Action Payoff
Exercise $C_u = 1300$

$S_0 = 26000$
$C_0 = ?$

$S_d = 24700$ Lapse $C_d = 0$

a $p = \dfrac{(1+r)-d}{u-d}$

$= \dfrac{1.03 - \frac{24700}{26000}}{\frac{27300}{26000} - \frac{24700}{26000}}$

$= \dfrac{1.03 - 0.95}{1.05 - 0.95}$

$\boxed{P = 0.80}$

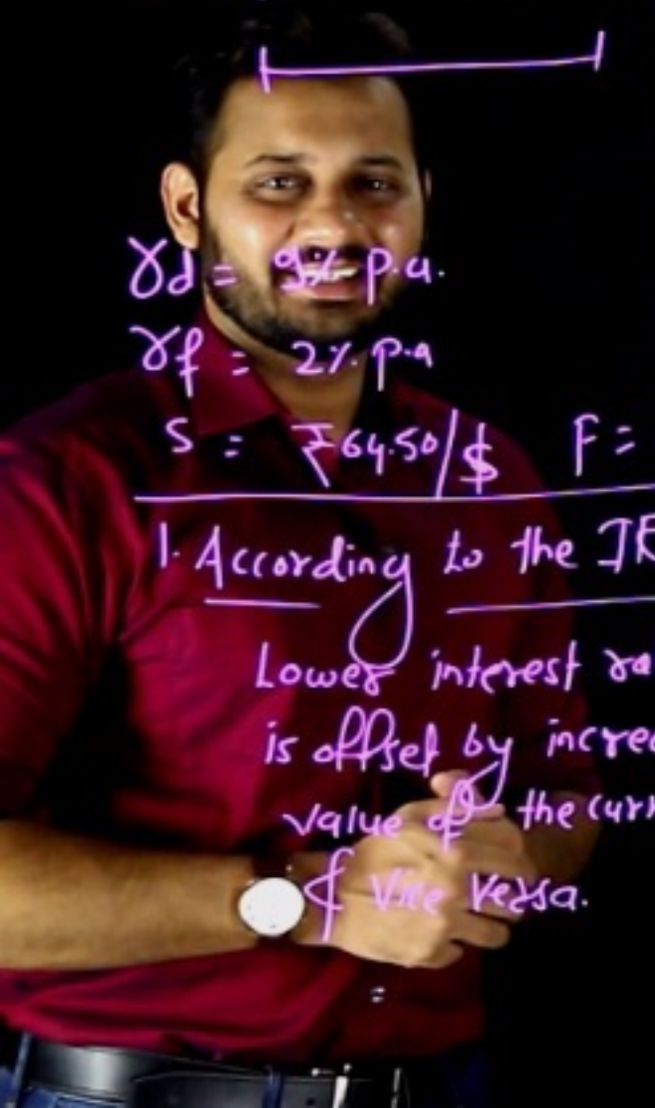
$$C_0 = \frac{[C_u \times p] + [C_d \times (1-p)]}{1+r}$$

$$= \frac{[1300 \times 0.80] + [0 \times 020]}{1.03}$$

$\boxed{C_0 = 1009.71}$

AMP = 1010
TMP = 1009.71
AMP > TMP
Call is overvalued

1(c)



$S = 64.50$ $F = 66.74$

$\gamma_d = 9\%$ p.a.

$\gamma_f = 2\%$ p.a.

$S = ₹64.50/\$$ $F = ₹/\$$?

1. According to the IRPT

Lower interest rate in one country is offset by increase in ~~the~~ the value of the currency of that country. & Vice Versa.

Interest Rate are lower in US. Hence US $ will be at Premium in Indian forward Market.

2. According to IRPT

$$\frac{1+\gamma_d}{1+\gamma_f} = \frac{F}{S}$$

$$\left[\text{IDA } \frac{1+\gamma_f}{1+\gamma_d} = \frac{F}{S} \text{ or } \frac{1+\gamma_d}{1+\gamma_f} = \frac{S}{F}\right]$$

$$\frac{1.045}{1.01} = \frac{F}{64.50}$$

$F = ₹/\$\ 66.74$

Price currency

$$\frac{S-F}{F} \times \frac{12}{N} \times 100$$

3. $$= \frac{f-S}{S} \times \frac{12}{N} \times 100$$

$$= \frac{66.74 - 64.50}{64.50} \times \frac{12}{6} \times 100$$

$= 6.95\%$ p.a.

$ is at a premium of 6.95% per annum.

1(d)

$i_d = 6.5\%$

$i_f = 3.0\%$

$S = ₹/\$\ 43.40$

According to PPP theory

$y=1$

$$\frac{1+i_d}{1+i_f} = \frac{F}{S}$$

$$\frac{1.0650}{1.03} = \frac{F}{43.40}$$

$$F_1 = ₹/\$\ 44.87$$

$y_3 =$

$$\frac{(1+i_d)^3}{(1+i_f)^3} = \frac{F_3}{S}$$

$$\frac{(1.0650)^3}{(1.03)^3} = \frac{F_3}{43.40}$$

$$F_3 = ₹/\$\ 47.98$$

2(a)

Year wise lease Rentals [in lacs] –

Year	LR	
1	3x	3×14.95 = 44.85
2	2x	2×14.95 = 29.90
3	x	1×14.95 = 14.95

WN1 Calculation of Lease Rentals (x)

NPV = PV of CIF − PV of COF

$$0 = \left[\begin{array}{l}\text{PV of}\\ \text{after tax}\\ \text{LR}\end{array}\right] + \left[\begin{array}{l}\text{PV of}\\ \text{tax}\\ \text{Saving}\\ \text{on Dep}\end{array}\right] - \text{Initial cost}$$

$$0 = \left[\begin{array}{l} 3x(1-0.35)\times 0.909 \\ +2x(1-0.35)\times 0.826 \\ +1x(1-0.35)\times 0.751 \end{array}\right] + 10.15 - 60$$

$$0 = 3.3345x + 10.15 - 60$$

$$x = 14.95 \text{ lakhs}$$

WN2 Tax saving on Dep [in lacs]

Year	Op.	Dep 25%	CI	Tax Saving 35%	PVF 10%	PV
1	60	15	45	5.25	0.909	4.77
2	45	11.25	33.75	3.94	0.826	3.25
3	33.75	8.44	25.31	2.95	0.721	2.13
						10.15

2(b)

[in lacs]

Particulars	yr	CF	PVF	PV
Initial cost	0	-1000	1	-1000
Running cost	1	400	0.917	
	2	500	0.842	-787.80
Savings	1	1200	0.917	
	2	1400	0.842	2279.20
NPV				491.40

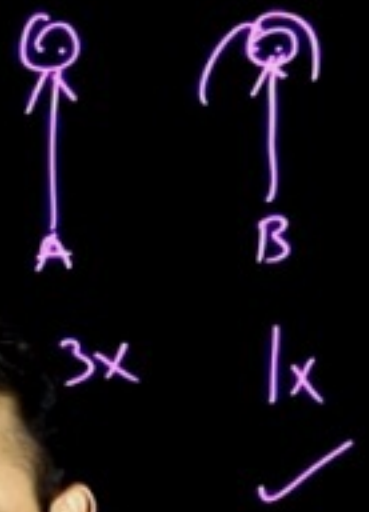
$$\text{Sensitivity} = \frac{\Delta \text{in base}}{\text{base}}$$

Initial cost $= \frac{491.40}{1000} = 49.14\% \uparrow$

Running cost $= \frac{491.40}{787.80} = 62.38\% \uparrow$

Savings $= \frac{491.40}{2279.20} = 21.56\% \downarrow$

Most sensitive factor is Savings because ONLY 21.56% adverse change brings down the NPV to '0' while other factors requires comparitively higher % of adverse change.



3(a)

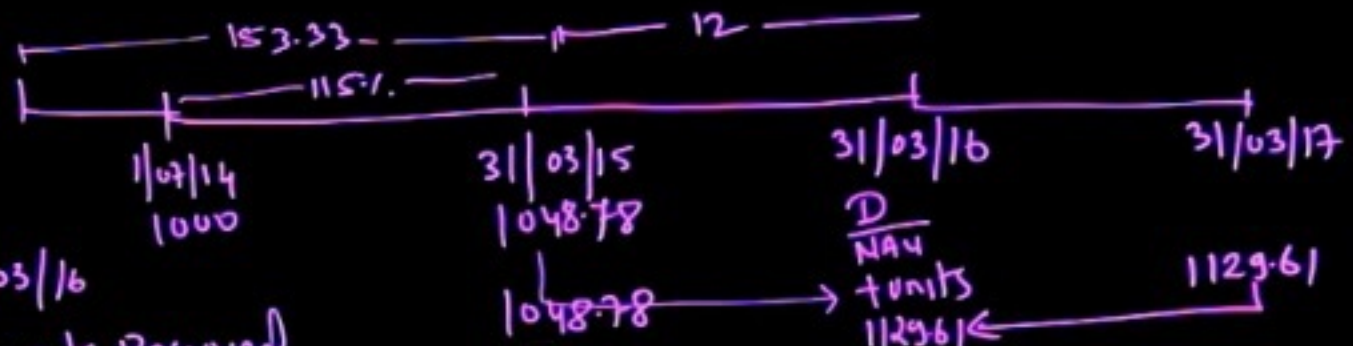
Day	MIBOR	Opening	Interest
Tuesday	8.75%	10000000	2397
Wednesday	9.15%	10002397	2507
Thursday	9.12%	10004904	2500
Friday	8.95%	10007404	2454
Saturday	8.98%	10009858	2463
Sunday	8.98%	10012321	2463
Monday	9.15%	10014784	2511
Floating leg [Receivables]			17295 — ①
Less Net Received			417
Fixed leg [Payable]			16878 — ①

$10009858 \times 8.98\% \times \frac{2}{365}$ ← [Saturday, Sunday]

$= 4926$

Fixed Rate $\frac{16878}{1,00,00,000} \times \frac{365}{7} \times 100 = 8.80\%$ p.a. — ②

3(b)



1] NAV as on 31/03/15

Annualised yield = 153.33%

Investment period = 9 months

Yield for Holding period = 115%

$$HPR = \frac{[NAV_1 - NAV_0] + D + CG}{NAV_0}$$

$$1.15 = \frac{[NAV_1 - 10] + 1 + 0}{10}$$

$$11.50 = NAV_1 - 9$$

$$NAV_1 = 20.50$$

Additional units Received $= \frac{1000 \times 10 \times 10\%}{20.50}$

$= 48.78$

2] NAV on 31/03/16

Additional units Received on dividend Reinvestment $[1129.61 - 1048.78] = 80.83$

$$\text{Additional units} = \frac{\text{No. of units} \times FV \times DR}{NAV}$$

$$80.83 = \frac{1048.78 \times 10 \times 20\%}{NAV}$$

$$NAV = ₹25.95$$

3. Holding period Return $= \frac{[NAV_1 \times N_1] - [NAV_0 \times N_0]}{[NAV_0 \times N_0]}$

$$0.7352 \times \frac{33}{12} = \frac{[NAV_1 \times 1129.61] - 10000}{10000}$$

$$NAV_1 = 26.75$$

4(a)

(i) First part = Interest Rate Cap

As the borrower does not want to pay more than 8.50% p.a. on this loan, whereas the rate of interest is likely to rise beyond this hence he can hedge the risk by entering into an agreement to buy interest rate caps with the following parameters.

- Notional principal: ₹40,00,000
- Strike rate: ~~8.59%~~ 8.50%.
- Reference rate: The rate of interest applicable for this loan — floating rate
- Calculation and settlement date: 31st March every year
- Duration of caps: Till 31st March, 2016
- Premium for caps: Negotiable between both the parties

To purchase the caps this borrower is required to pay the premium upfront at the time of buying caps. The payment of such premium will entitle him with the right to receive the compensation from the seller of the caps as soon as rate of interest on this loan rises above 8.50%. The compensation will be at the rate of the difference between the rate of interest applicable for the loan and 8.50% calculated on ₹40,00,000. This implies that in none of the cases the cost of this loan will rise above 8.50%. This hedging benefit is received at the respective interest due dates at the cost of premium to be paid only once.

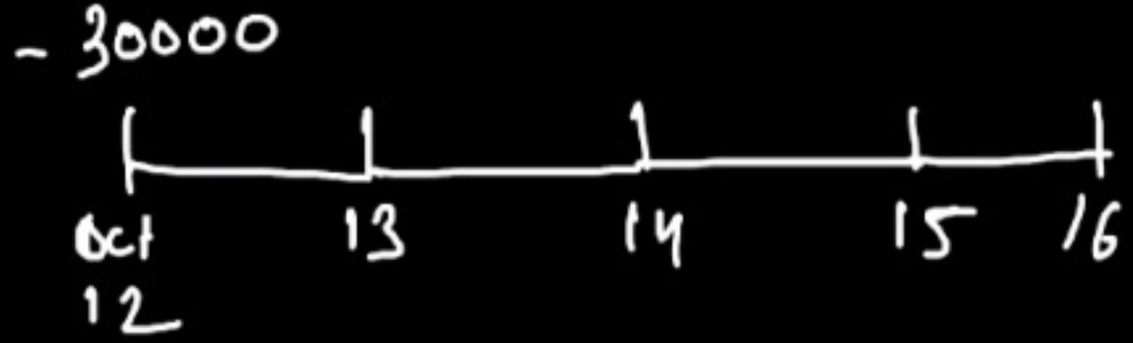
Answer video with explanation will be uploaded on youtube channel CA Mayank Kothari

4(a)

(ii) Part 2

The premium to be paid upfront

$$4000000 \times 0.75\% = ₹ 30000$$



4(a)

(ii) **part 2**

Table 1

Cap Receipts

Date	Spot Rate (S)	Strike Rate (K)	Settlement Amount [Max (0, S-K)]
31/03/13	10·2%	8·50%	[10·2 − 8·50]% × 4,00,000 = ₹68000
31/03/14	11·50%	8·50%	[11·50 − 8·50]% × 4000000 = ₹120000
31/03/15	9·25%	8·50%	[9·25 − 8·50]% × 4000000 = ₹30000
31/03/16	8·25%	8·50%	NIL

4(b)

a. Exchange Ratio = $\frac{12}{15}$: [illegible]

= 0.80 : 1

Post Merger Earnings per share	
Post Merger EAT [200000 + 60000]	260000
Post Merger No. of equity shares 40000 + 10000 × 0.80	48000
Post Merger EPS	5.4167

b. Exchange Ratio should be on the basis of EPS

	East	Post
Earnings after tax	200000	60000
No. of shares	40000	10000
EPS	5	6

∴ Exchange Ratio = $\frac{6}{5}$ = 1

ER = 1.2 : 1

(i)

(ii)

5(a)

1. Forward Contract $\frac{\$20,000,000}{0.016129}$ = ₹1240002480

2. Futures Contract

a. Underlying Asset : INR

After 3 months we want to Buy INR, sell USD

Hence Buy futures

b. No. of contracts : $\frac{\$20,000,000}{0.016118}$ = ₹31021218 = 40 contracts

c. Initial Margin [time = 0]

50000 × 40 = −₹2000000

Borrowing : +₹2000000

= 0

d. At Maturity [t = 3m]

Buy Futures 0.016118

Sell Futures 0.016134

gain $/₹ 0.000016

Contract size [31021218 × 40] or [$\frac{2000000}{0.016118}$] 1240848720

Total gain $19853.58

e. Received from $20000000 debtors

Received from $19853.58 Exchange $20019853.58

Spot Rate 0.016136

INR ₹1,240,694,942

(-) Interest on Initial Margin [2000000 × 2%] − 40000

= ₹1,240,654,942

3. No Hedging = $20000000 / 0.016136 → = ₹1239646455

Conclusion:- Futures would be most advantages to JKL Ltd to Hedge Foreign currency Risk

5(b)

Current MP = 125
Current DPS = EPS = 25

Earlier		25	25	25 . . .
Now		7.5	30	30 . . .

If the New investment is taken up then ~~dividend~~ dividend amt will get reduced for year 1 & will increase from year 2 onwards

Dividend for year 1 = $\left[25 - \frac{17500000}{10000000}\right] = 7.5$/share

Dividend for year 2 onwards = $\left[25 + \frac{50000000}{10000000}\right] = 30$/share

Impact on dividend

$MP = \frac{D(1+g)}{ke-g} = \frac{25}{?}$

$ke = \frac{D}{MP} = \frac{25}{125} = 20\%$

ii] Impact on share price

NPV = PV of CIF − PV of COF

$= \left[\frac{50000000}{0.20}\right] \frac{1}{1.20} - \frac{17500000}{1.20}$

NPV = 6250000

Since NPV is +ve, MP will increase by $\frac{6250000}{10,00,000} = 6.25$/share ∴ New MP = 131.25

$ke = \frac{\text{Dividend}}{MP} = \frac{25}{125} = 20\%$

Impact on MP

6(a)

a. Return of the portfolio

$R_p = \sum R_i W_i$

$= R_L \times w_L + R_K w_K$

$= 9 \times 0.50 + 8 \times 0.50$

$R_p = 8.5\%$

Portfolio Return

b. Risk of portfolio

$\sigma_p^2 = (\sigma_L w_L)^2 + (\sigma_K w_K)^2 + 2 w_L w_K (COV_{LK})$

$= (4.05 \times 0.50)^2 + (7.29 \times 0.50)^2 + 2 \times 0.50 \times 0.50 \times 17.8$

$= 4.1 + 13.29 + 8.9$

$\sigma_p^2 = 26.29$

Standard Deviation $= 5.13\%$

Portfolio Risk

50:50 weights assumed.

yr	L	K	$(L-\bar{L})$	$(K-\bar{K})$	$(L-\bar{L})^2$	$(K-\bar{K})^2$	$(L-\bar{L})(K-\bar{K})$
1	10	11	1	3	1	9	3
2	4	-6	-5	-14	25	196	70
3	5	13	-4	5	16	25	-20
4	11	8	2	0	4	0	0
5	15	14	6	6	36	36	36
							89
	$\bar{L}=9$	$\bar{K}=8$			$\sum(L-\bar{L})^2 = 82$	$\sum(K-\bar{K})^2 = 266$	
					Variance $= 16.4$	$= 53.2$	$\left[COV = \frac{89}{5}\right] = 17.8$
					SD $= 4.05$	$= 7.29$	

6(b)

Required Return
$3000000 \times 6\% = 180000$

a. $\left[3000000 \times 10\% \times \frac{P}{12}\right] - 45000 = 180000$

$25000P = 225000$

$P = 9$ months ←

b. Break Even

$\left[3000000 \times 10\% \times \frac{P}{12}\right] - 45000 = 0$

$25000P = 45000$

$P = 1.8$ months for break even ←