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SUGGESTED SOLUTION

FINAL Nov' 2019 EXAM

SUBJECT- SFM

Test Code – FNJ 7177

BRANCH - () (Date :)

Head Office : Shraddha, 3rd Floor, Near Chinai College, Andheri (E), Mumbai – 69.
Tel : (022) 26836666

Answer 1:

(A)

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

(5 marks)

(B)

(i) Determination of EPS, P/E Ratio, ROE and BVPS of R Ltd.& S Ltd.

	R Ltd.	S Ltd.
EAT (Rs.)	5,33,000	2,49,600
N	200000	160000
EPS (EAT÷N)	2.665	1.56
Market Price Per Share	50	20
PE Ratio (MPS/EPS)	18.76	12.82
Equity Fund (Equity Value)	2400000	1600000
BVPS (Equity Value ÷ N)	12	10
ROE (EAT÷ EF) or	0.2221	0.156
ROE (EAT ÷ EF)	22.21%	15.60%

(4 marks)

(ii) Determination of Growth Rate of EPS of R Ltd.& S Ltd.

	R Ltd.	S Ltd.
Retention Ratio (1-D/P Ratio)	0.80	0.70
Growth Rate (ROE x Retention Ratio) or	0.1777	0.1092
Growth Rate (ROE x Retention Ratio)	17.77%	10.92%

(2 marks)

(iii) Justifiable equity share exchange ratio

(a) Market Price Based = MPS_S/MPS_R = Rs. 20/ Rs. 50 = 0.40:1 (lower limit)

(b) Intrinsic Value Based = Rs. 25/ Rs. 50 = 0.50:1 (max. limit)

Since R Ltd. has higher EPS, PE, ROE and higher growth expectations the negotiated term would be expected to be closer to the lower limit, based on existing share price. **(2 marks)**

(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 (USD 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

Thus total payment in:

(i)	Forward Cover	2,36,103 GBP
(ii)	Money Market	2,36,510 GBP
(iii)	Currency Option	2,27,923 GBP

The company should take currency option for hedging the risk.

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

(7 MARKS)

Answer 2:

(A)

First of all we shall calculate premium payable to bank as follows:

$$P = \frac{rp}{(1-i)-\frac{1}{i\ x\ (1+i)t}} \text{ x A} \quad \text{or} \quad \frac{rp}{PVAF\ (3.5\%,4)}\ x\ A$$

(1 mark)

Where

P = Premium

A = Principal Amount

rp = Rate of Premium

i = Fixed Rate of Interest

t = Time

$$= \frac{0.01}{(1\ /\ 0.035)-\frac{1}{0.035\ x\ (1.035)4}} \text{ x £15,000,000} \quad \text{or} \quad \frac{0.01}{(0.966+0.933+0.901+0.871)} \text{ x £15,000,000}$$

$$= \frac{0.01}{(28.5714)-\frac{1}{0.04016}} \text{ x £15,000,000} \quad \text{or} \quad \frac{\text{£15,000,000}}{3.671} = \text{£40,861}$$

Please note above solution has been worked out on the basis of four decimal points at each stage. **(3 marks)**

Now we see the net payment received from bank

Reset Period	Additional interest due to rise in interest rate	Amount received from bank	Premium paid to bank	Net Amt. received from bank
1	£ 75,000	£ 75,000	£ 40,861	£34,139
2	£ 112,500	£ 112,500	£ 40,861	£71,639
3	£ 150,000	£ 150,000	£ 40,861	£109,139
TOTAL	£ 337,500	£ 337,500	£122,583	£ 214,917

Thus, from above it can be seen that interest rate risk amount of £ 337,500 reduced by £ 214, 917 by using of Cap option. **(4 marks)**

Note: It may be possible that student may compute up to three decimal points or may use different basis. In such case their answer is likely to be different.

(B)

(i) Number of shares to be issued: 5,00,000

Subscription price Rs. 20,00,000 / 5,00,000 = Rs. 4

Ex-right Price = $\frac{\text{Rs.1,30,00,000 + Rs.20,00,000}}{15,00,000} = \text{Rs.10}$

Value of right = $\frac{\text{Rs.10 - Rs.4}}{2} = 3$

Or = Rs. 10 – Rs. 4 = Rs. 6 **(2 marks)**

(ii) Subscription price Rs. 20,00,000 / 2,50,000 = Rs. 8

Ex-right Price = $\frac{\text{Rs.1,30,00,000 +Rs.20,00,000}}{12,50,000} = Rs.12$

Value of right = $\frac{\text{Rs.12 - Rs.8}}{4} = Rs.1.$

Or = Rs. 12 – Rs. 8 = Rs. 4 **(2 marks)**

(iii) The effect of right issue on wealth of Shareholder's wealth who is holding, say 100 shares.

(a) When firm offers one share for two shares held.

Value of Shares after right issue (150 X Rs. 10)	Rs. 1,500
Less: Amount paid to acquire right shares (50XRs.4)	Rs. 200
	Rs.1,300

(b) When firm offers one share for every four shares held.

Value of Shares after right issue (125 X Rs. 12)	Rs. 1,500
Less: Amount paid to acquire right shares (25XRs.8)	Rs. 200
	Rs.1,300

(c) Wealth of Shareholders before Right Issue Rs.1,300

Thus, there will be no change in the wealth of shareholders from (i) and (ii).

(2 marks)

(C)

(i) Computation of Expected Return from Portfolio

Security	Beta (β)	Expected Return (r) as per CAPM	Amount (Rs. Lakhs)	Weights(w)	wr
Moderate	0.50	8%+0.50(10% - 8%) = 9%	60	0.115	1.035
Better	1.00	8%+1.00(10% - 8%) = 10%	80	0.154	1.540
Good	0.80	8%+0.80(10% - 8%) = 9.60%	100	0.192	1.843
V. Good	1.20	8%+1.20(10% - 8%) = 10.40%	120	0.231	2.402
Best	1.50	8%+1.50(10% - 8%) = 11%	160	0.308	3.388
Total			520	1	10.208

Thus Expected Return from Portfolio 10.208% say 10.21%. **(4 marks)**

Alternatively, it can be computed as follows:

Average $\beta = 0.50 \text{ x } \frac{60}{520} + 1.00 \text{x} \frac{80}{520} + 0.80 \text{ x } \frac{100}{520} + 1.20 \text{ x } \frac{120}{520} + 1.50 \text{ x } \frac{160}{520} = 1.104$

As per CAPM

= 0.08 + 1.104(0.10 – 0.08) = 0.10208 i.e. 10.208%.

(ii) As computed above the expected return from Better is 10% same as from Nifty, hence there will be no difference even if the replacement of security is made. The main logic behind this neutrality is that the beta of security 'Better' is 1 which clearly indicates that this security shall yield same return as market return. **(2 marks)**

Answer 3:

(A)

Calculation of NPV

Year	0	1	2	3
Inflation factor in India	1.00	1.10	1.21	1.331
Inflation factor in Africa	1.00	1.40	1.96	2.744
Exchange Rate (as per IRP)	6.00	7.6364	9.7190	12.3696
Cash Flows in Rs.'000				

Real	-50000	-1500	-2000	-2500
Nominal (1)	-50000	-1650	-2420	-3327.50
Cash Flows in African Rand '000				
Real	-200000	50000	70000	90000
Nominal	-200000	70000	137200	246960
In Indian Rs. '000 (2)	-33333	9167	14117	19965
Net Cash Flow in Rs. '000 (1)+(2)	-83333	7517	11697	16637
PVF@20%	1	0.833	0.694	0.579
PV	-83333	6262	8118	9633

NPV of 3 years = -59320 (Rs. '000)

NPV of Terminal Value = (16637 / 0.20) x 0.579 = 48164 (Rs. '000)

Total NPV of the Project = -59320 (Rs. '000) + 48164 (Rs.'000) = -11156 (Rs.'000)

(8 marks)

(B) Every startup needs access to capital, whether for funding product development, acquiring machinery and inventory, or paying salaries to its employee. Most entrepreneurs think first of bank loans as the primary source of money, only to find out that banks are really the least likely benefactors for startups. So, innovative measures include maximizing non-bank financing.

Here are some of the sources for funding a startup:

(i) **Personal financing.** It may not seem to be innovative but you may be surprised to note that most budding entrepreneurs never thought of saving any money to start a business. This is important because most of the investors will not put money into a deal if they see that you have not contributed any money from your personal sources.

(ii) **Personal credit lines.** One qualifies for personal credit line based on one's personal credit efforts. Credit cards are a good example of this. However, banks are very cautious while granting personal credit lines. They provide this facility only when the business has enough cash flow to repay the line of credit.

(iii) **Family and friends.** These are the people who generally believe in you, without even thinking that your idea works or not. However, the loan obligations to friends and relatives should always be in writing as a promissory note or otherwise.

(iv) **Peer-to-peer lending.** In this process group of people come together and lend money to each other. Peer to peer to lending has been there for many years. Many small and ethnic business groups having similar faith or interest generally support each other in their start up endeavors.

(v) **Crowdfunding**. Crowdfunding is the use of small amounts of capital from a large number of individuals to finance a new business initiative. Crowdfunding makes use of the easy accessibility of vast networks of people through social media and crowdfunding websites to bring investors and entrepreneurs together.

(vi) **Microloans.** Microloans are small loans that are given by individuals at a lower interest to a new business ventures. These loans can be issued by a single individual or aggregated across a number of individuals who each contribute a portion of the total amount.

(vii) **Vendor financing.** Vendor financing is the form of financing in which a company lends money to one of its customers so that he can buy products from the company itself. Vendor financing also takes place when many manufacturers and distributors are convinced to defer payment until the goods are sold. This means extending the payment terms to a longer period for e.g. 30 days payment period can be extended to 45 days or

60 days. However, this depends on one's credit worthiness and payment of more money.

(viii) **Purchase order financing.** The most common scaling problem faced by startups is the inability to find a large new order. The reason is that they don't have the necessary cash to produce and deliver the product. Purchase order financing companies often advance the required funds directly to the supplier. This allows the transaction to complete and profit to flow up to the new business.

(ix) **Factoring accounts receivables.** In this method, a facility is given to the seller who has sold the good on credit to fund his receivables till the amount is fully received. So, when the goods are sold on credit, and the credit period (i.e. the date upto which payment shall be made) is for example 6 months, factor will pay most of the sold amount upfront and rest of the amount later. Therefore, in this way, a startup can meet his day to day expenses.

(6 MARKS)

(C)

Proforma profit and loss account of the Indian software development unit

	Rs.	Rs.
Revenue		65,00,00,000
Less: Costs:		
Rent	20,00,000	
Manpower (Rs.540 x 80 x 10 x 365)	15,76,80,000	
Administrative and other costs	16,20,000	16,13,00,000
Earnings before tax		48,87,00,000
Less: Tax		14,66,10,000
Earnings after tax		34,20,90,000
Less: Withholding tax		3,42,09,000
Repatriation amount (in rupees)		30,78,81,000
Repatriation amount (in dollars)		$4.7366 million

(5 marks)

Advise: The cost of development software in India for the foreign based company is $5.3 million. As the USA based Company is expected to sell the software in the international market at $12.0 million, it is advised to develop the software in India. **(1 mark)**

Answer 4:

(A)

Net Issue Size = $10 million

Gross Issue = (Rs.10 million / 0.98) = $10.2041 million

Issue Price per GDR in Rs. (250 x 2 x 96%) Rs.480

Issue Price per GDR in $ (Rs. 480/ Rs.64) $7.50

Dividend Per GDR (D_1) = Rs. 15 x 2 = Rs.30

Net Proceeds Per GDR = Rs. 480 x 0.98 = Rs.470.40

(4 marks)

(i) **Number of GDR to be issued**

($10.2041 million / $ 7.50) = 1.360547 million **(1 mark)**

(ii) **Cost of GDR to Omega Ltd.**

Ke = (30 / 470.40) + 0.12 = 18.378% **(1 mark)**

(B) Option - I

$20 x 5000 = $ 1,00,000

Repayment in 3 months time = $1,00,000 x (1 + 0.10/4) = $

1,02,500 3-months outright forward rate = Rs. 59.90/ Rs. 60.30

Repayment obligation in Rs. ($1,02,500 X Rs. 60.30) = Rs. 61,80,750

(2.5 marks)

Option -II

Overdraft ($1,00,000 x Rs. 60.55)	Rs. 60,55,000
Interest on Overdraft (Rs. 60,55,000 x 0.14/4)	Rs. 2,11,925
	Rs. 62,66,925

Option I should be preferred as it has lower outflow. **(2.5 marks)**

(C)

No. of the Future Contract to be obtained to get a complete hedge

$$= \frac{10000 \times Rs.22 \times 1.5 - 5000 \times Rs.40 \times 2}{Rs.1000}$$

$$= \frac{Rs.3,30,000 - Rs.4,00,000}{Rs.1000} = 70 \text{ contracts}$$

Thus, by purchasing 70 Nifty future contracts to be long to obtain a complete hedge.

Cash Outlay

= 10000 x Rs. 22 – 5000 x Rs. 40 + 70 x Rs. 1,000

= Rs. 2,20,000 – Rs. 2,00,000 + Rs. 70,000 = Rs. 90,000

Cash Inflow at Close Out

= 10000 x Rs. 22 x 0.98 – 5000 x Rs. 40 x 1.03 + 70 x Rs. 1,000 x 0.985

= Rs. 2,15,600 – Rs. 2,06,000 + Rs. 68,950 = Rs. 78,550

Gain/ Loss

= Rs. 78,550 – Rs. 90,000 = - Rs. 11,450
(Loss)

(6 MARKS)

(D)

Steps in securitization mechanism:

1) Creation of Pool of Assets
2) Transfer to SPV
3) Sale of Securitized Papers
4) Administration of assets
5) Recourse to Originator
6) Repayment of funds
7) Credit Rating to Instruments **(3 marks)**

Answer 5:

(A)

Return of the stock under APT

Factor	Actual value in %	Expected value in %	Difference	Beta	Diff. x Beta
GNP	7.70	7.70	0.00	1.20	0.00
Inflation	7.00	5.50	1.50	1.75	2.63
Interest rate	9.00	7.75	1.25	1.30	1.63
Stock index	12.00	10.00	2.00	1.70	3.40
Ind. Production	7.50	7.00	0.50	1.00	0.50
					8.16
Risk free rate in %					9.25
Return under APT					17.41

(5 marks)

(B)

Particulars	**Rs. Crores**
1. Listed Shares (Cost 20.00 × $\frac{Present\ Index\ 2{,}300}{Previous\ Index\ 1{,}000}$	46.00
2. Cash in Hand	1.23
3. Bonds and Debentures at Cost	
a) Unlisted / Unquoted Bonds (Cost 1.00 Less 20% Diminution)	0.80
b) Listed Bonds and Debentures	8.00
c) Other Fixed Interest Securities (Cost Rs. 4.50 Cr. × Current Realizable value 106.50 ÷ FV Rs. 100.00)	4.79

4. Dividend Accrued	0.80
Total of Assets	**61.62**
1. Amount Payable on Shares	6.32
2. Expenditure Accrued	0.75
Total of Liabilities	**7.07**
Net Asset Value (Rs. Crores)	**54.55**
No. of Units Outstanding (in Crores)	**0.20**
NAV Per Unit = $\frac{Net\ Assets\ of\ the\ Scheme}{Number\ of\ Units\ outstanding} = \frac{54.55}{0.20}$ **= Rs. 272.75**	

(6 marks)

(C)

(i) Straight Value of Bond

Rs. 85 x 0.9132 + Rs. 85 x 0.8340 + Rs. 1085 x 0.7617 = Rs. 974.96 **(1.5 mark)**

(ii) Conversion Value

Conversion Ration x Market Price of Equity Share

= Rs. 45 x 25 = Rs. 1,125 **(1.5 mark)**

(iii) Conversion Premium

Conversion Premium = Market Conversion Price - Market Price of Equity Share

= (Rs. 1175 / 25) - Rs. 45 = Rs. 2

or = Rs. 1,175 - Rs. 45 x 25 = Rs. 50

Or [(Rs. 1175 - Rs. 1125) / Rs. 1125] = 4.47% **(2 marks)**

(iv) Percentage of Downside Risk

[(Rs. 1175 – Rs. 974.96) / Rs. 974.96] x 100 = 20.52%

Or

[(Rs. 1175 - Rs. 974.96) / Rs.1175] = 17.02% **(2 marks)**

(v) Conversion Parity Price

(Bond Price / No. of Share on conversion)

= (Rs. 1175 / 25)

= Rs. 47 **(2 marks)**

Answer 6:

(A)

(i) **Long time horizon**: The fund would invest with a long time horizon in mind. Minimum period of investment would be 3 years and maximum period can be 10 years.

(ii) **Lack of liquidity**: When VC invests, it takes into account the liquidity factor. It assumes that there would be less liquidity on the equity it gets and accordingly it would be investing in that format. They adjust this liquidity premium against the price and required return.

(iii) **High Risk**: VC would not hesitate to take risk. It works on principle of high risk and high return. So, high risk would not eliminate the investment choice for a venture capital.

(iv) **Equity Participation**: Most of the time, VC would be investing in the form of equity of a company. This would help the VC participate in the management and help the company grow. Besides, a lot of board decisions can be supervised by the VC if they participate in the equity of a company.

(1 mark x 4 = 4 marks)

(B)

(i) Total premium paid on purchasing a call and put option

= (Rs. 30 per share × 100) + (Rs. 5 per share × 100).

= 3,000 + 500 = Rs. 3,500

In this case, X exercises neither the call option nor the put option as both will result in a loss for him.

Ending value = - Rs. 3,500 + zero gain = - Rs. 3,500

i.e Net loss = Rs. 3,500 **(2 marks)**

(ii) Since the price of the stock is below the exercise price of the call, the call will not be exercised. Only put is valuable and is exercised.

Total premium paid = Rs.3,500

Ending value = – Rs. 3,500 + Rs.[(450 – 350) × 100] = – Rs.3,500 + Rs.10,000 = Rs.6,500

Net gain = Rs. 6,500 **(2 marks)**

(iii) In this situation, the put is worthless, since the price of the stock exceeds the put's exercise
price. Only call option is valuable and is

exercised. Total premium paid = Rs. 3,500

Ending value = -3,500 +[(600 – 550) × 100]

Net Gain = -3,500 + 5,000 = Rs.1,500 **(2 marks)**

(C)

Impact of Financial Restructuring

(i) Benefits to Grape Fruit Ltd.

(a) Reduction of liabilities payable

Rs. in lakhs	
Reduction in equity share capital (6 lakh shares x Rs.75 per share)	450
Reduction in preference share capital (2 lakh shares x Rs.50 per share)	100
Waiver of outstanding debenture Interest	26
Waiver from trade creditors (Rs.340 lakhs x 0.25)	85
	661
(b) *Revaluation of Assets*	
Appreciation of Land and Building (Rs.450 lakhs - Rs.200 lakhs)	250
Total (A)	911

(3 marks)

Amount of Rs.911 lakhs utilized to write off losses, fictious assets and over- valued assets.

Writing off profit and loss account	525
Cost of issue of debentures	5
Preliminary expenses	10
Provision for bad and doubtful debts	15
Revaluation of Plant and Machinery (Rs.300 lakhs – Rs.180 lakhs)	120
Total (B)	675
Capital Reserve (A) – (B)	236

(2 marks)

(ii) Balance sheet of Grape Fruit Ltd as at 31st March 2011 (after re-construction)

(Rs. in lakhs)

Liabilities	Amount	Assets		Amount
12 lakhs equity shares of Rs. 25/- each	300	Land & Building		450
10% Preference shares of Rs. 50/- each	100	Plant & Machinery		180
Capital Reserve	236	Furnitures & Fixtures		50

9% debentures	200	Inventory		150
Loan from Bank	74	Sundry debtors	70	
Trade Creditors	255	Prov. for Doubtful Debts	-15	55
		Cash-at-Bank (Balancing figure)*		280
	1165			1165

*Opening Balance of Rs.130/- lakhs + Sale proceeds from issue of new equity shares Rs.150/- lakhs. **(5 marks)**