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SUGGESTED SOLUTION

FINAL MAY 2019 EXAM

SUBJECT- SFM

Test Code – FNJ 7177

BRANCH - () (Date :)

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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)

Key elements of a well-functioning Financial System:

(i) A strong legal and regulatory environment – Capital market is regulated by SEBI which acts a watchdog of the securities market. Likewise money market and foreign exchange market is regulated by RBI and this has been ensured through various provisions of the RBI Act, Foreign Exchange Management Act etc. Thus, a strong legal system protects the rights and interests of investors and acts as a most important element of a sound financial system.

(ii) Stable money – Money is an important part of an economy. Frequent fluctuations and depreciations in the value of money lead to financial crises and restrict the economic growth.

(iii) Sound public finances and public debt management – Sound public finances means setting and controlling public expenditures and increase revenues to fund these expenditures efficiently. Public debt management is the process of establishing and executing a strategy for managing the government's debt in order to raise the required amount of funding. It also includes developing and maintaining an efficient market for government securities.

(iv) A central bank – A central bank supervises and regulates the operations of the banking system. The monetary policy of the Central Bank is used to keep the pace of economic growth on a higher path.

(v) Sound banking system – A well-functioning financial system must have large variety of banks both in the private and public sector having both domestic and international operations with an ability to withstand adverse national and international events.

(vi) Information System – All the participants in the financial system requires information at some stage or the other. Proper information disclosure practices form basis of a sound financial system.

(vii) Well-functioning securities market – A securities market facilitates the issuance of both equity and debt. An efficient securities market helps in the deployment of funds raised through the capital market to the required sections of the economy, lowering the cost of capital for the firms, enhancing liquidity and attracting foreign investment. **(1 mark x 7 = 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

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

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

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

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

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

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

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)

Islamic Finance Instruments

Although there are number of Islamic Finance products, but some of common products/instruments are as follows:

(1) **Mudaraba :** The Mudaraba is a kind of profit sharing arrangement wherein

one party provides 100% of the capital involved and other party provides specialized knowledge and entrusted with exclusive responsibility of working. In case there is profit it shared among them in the pre-decided ratio and if there is loss only financier will borne the same.

(2) **Musharaka :** It is a kind of joint business venture wherein all parties provide the capital in the business in agreed ratio and also have right to participate in the business. While the loss is strictly shared in the ratio of their capital contribution, the profit is shared as perpre-agreed ratio.

(3) **Sukuk :** It is one of the most popular Islamic financial products. It is a kind of 'Debt Certificate' representing ownership in business or assets and through this instrument company borrows the money. Although it appears to be conventional debt instruments but is differs in following aspects:

- To have share in profit of assets.
- To have share in the underlying assets on realization of assets.

(4) **Ijara :** It is a kind of lease financing arrangement wherein one party transfer the asset to other partly for some specific time for specific fee which includes capital cost of assets and profit margin of the lessor. In this arrangement, the responsibility for maintenance of the leased items remains with the lessor.

(5) **Murabaha :** Also, known as cost plus contract it is a kind of trade credit or loans and mainly helps exporters and importer in meeting their funding requirements. The main feature of this arrangement is that profit margin of the financier is known to the buyer. In this arrangement financier buys thee assets and sells to the client (buyer) and buyer pays to the financier in installments consisting of following two elements:

- Cost of asset financed.
- Financier's profit on acquisition of asset.

(6) **Istisna :** It is a kind of funding arrangements for long term construction contracts wherein client pays some initial amount and balance amount is payable is repaid in installments. The whole project is funded by the financer and completion of project it is delivered to the client.

(7) **Salam :** It is analogues to forward contract in the conventional finance. Though cash is received by the seller immediately on sale but goods as per pre-decided quality, quantity and time shall only be delivered in future. This

sale shall be at the discounted price so that financer could make some profit out of the deal. However, it is important to note that Salam is prohibited in commodities such a gold, silver and other type of monetary assets.

(students can write any six points) **(1 mark x 6 = 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

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

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

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)

<u>Steps in securitization mechanism:</u>

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 2. Expenditure Accrued	6.32 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)**