SUGGESTED ANSWERS

AMT

PAPER – 2 : STATRETGIC FINANCIAL MANAGEMENT (OLD SYLLABUS)

Question 1(a)

(i) Stock value or conversion value of bond

$12 \times 20 = Rs.\ 240$

(ii) Percentage of the downside risk

$$\frac{Rs.265 - Rs.235}{Rs.\ 235} = 0.1277 \text{ or } 12.77\%$$

This ratio gives the percentage price decline experienced by the bond if the stock becomes worthless.

(iii) Conversion Premium

$$\frac{\text{Market Price - Conversion Value}}{\text{Conversion Value}} \times 100$$

$$\frac{Rs.\ 265 - Rs.\ 240}{Rs.\ 240} \times 100 = 10.42\%$$

(iv) ConversionParityPrice

$$\frac{\text{Bond Price}}{\text{No. of Shares on Conversion}}$$

$$\frac{Rs.265}{20} = Rs.13.25$$

This indicates that if the price of shares rises to Rs. 13.25 from Rs. 12 the investor will neither gain nor lose on buying the bond and exercising it. Observe that Rs. 1.25 (Rs. 13.25 – Rs. 12.00) is 10.42% of Rs. 12, the Conversion Premium.

Question 1(b)

The optional hedge ratio to minimize the variance of Hedger's position is given by:

$$H = \frac{p * \delta S}{\delta F}$$

Where

δS= Standard deviation of ΔS

δF=Standard deviation of ΔF

p= coefficient of correlation between ΔS and ΔF H= Hedge Ratio

ΔS = change in Spot price.

ΔF= change in Future price.

Accordingly

$$H = \frac{0.75 \times 0.04}{0.06} = 0.5$$

No. of contract to be short = 10 x 0.5 = 5

Amount = 5000 x Rs. 474 = Rs. 23,70,000

Question 1(c):

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. 61,80,75

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.

Question 1 (d)

Yield for 9 months (120% x 9/12) = 90%

Market value of Investments as on 31.03.2011 =Rs. 50,000/- + (Rs. 50,000x 90%) = Rs. 95,000

Therefore, NAV as on 31.03.2011 = (Rs. 95,000 - Rs. 5,000)/5,000 = Rs. 18.00

Since dividend was reinvested by Mr. X, additional units acquired = $\frac{\text{Rs. 5,000}}{\text{Rs.18}}$ =277.78 unit

Therefore, units as on 31.03.2011 = 5000 + 277.78 = 5277.78

Alternatively, units as on 31.03.2011 = (Rs. 95000/Rs. 18) = 5277.78

Dividend as on 31.03.2012 = 5277.78 × Rs. 10 ×0.2 = Rs. 10555.56

Let X be the NAV on 31.03.2012, then number of new units reinvested will be Rs.10,555.56/X.

Accordingly 6,271.98 units shall consist of reinvested units and 5277.78 (as on 31.03.2011).

Thus, by way of equation it can be shown as follows:

$$6271.98 = \frac{\text{Rs.10,555.56}}{X} + 5277.78$$

Therefore, NAV as on 31.03.2012 = Rs. 10,555.56/(6,271.98 – 5,277.78) = Rs. 10.62

NAV as on 31.03.2013 = Rs. 50,000 (1+0.715x33/12)/6,271.98 = Rs. 23.65

Question 2(a)

Discounting Factor:

Cost of finance 20% - Tax 35% = 13%.

(i) PV of cash outflows under leasing alternative

Year-end	Lease rent after taxes P.A.	PVIFA at 13%	Total P.V.
1-5	Rs. 3,90,000	3.517	Rs. 13,71,630

PV of cash outflows under buying alternative

Year end	Loan Instalment	Tax advantage on Interest	Tax advantage on Depreciation	Net Cash Outflow	PVIF at 13%	Total PV
1	6,68,673	1,40,000	1,75,000	3,53,673	0.885	3,13,001
2	6,68,673	1,21,193	1,31,250	4,16,230	0.783	3,25,908
3	6,68,673	98,624	98,438	4,71,611	0.693	3,25,908
4	6,68,673	71,542	73,828	5,23,303	0.613	3,20,785
5	6,68,673	38,819	55,371	5,74,483	0.543	3,11,944
				Total PV outflows		15,98,464
				Less: PV of Salvage Value (Rs. 4,00,000 *0.543)		2,17,200
						13,81,264
				Less: PV of tax saving on short term capital loss		
				(4,74,609 – 4,00,000) * 35% * .543		14,179
				NPV of Cash outflow		13,67,085

Working Notes:

(1) Schedule of Debt Payment

Year- end	Opening balance	Interest @ 20%	Repayment	Closing Balance	Principal Amount
1	20,00,000	4,00,000	6,68,673	17,31,327	2,68,673
2	17,31,327	3,46,265	6,68,673	14,08,919	3,22,408
3	14,08,919	2,81,784	6,68,673	10,22,030	3,86,889
4	10,22,030	2,04,406	6,68,673	5,57,763	4,64,267
5	5,57,763	1,10,910*	6,68,673	0	5,57,763

*Balancing Figure

(2) Schedule of Depreciation

Year- end	Opening WDV	Depreciation	Closing WDV
1	20,00,000	5,00,000	15,00,000
2	15,00,000	3,75,000	11,25,000
3	11,25,000	2,81,250	8,43,750
4	8,43,750	2,10,938	6,32,812
5	6,32,812	1,58,203	4,74,609

(3) EMI = Rs. 20,00,000 / Annuity for 5 years @ 20% = i.e. Rs. 20,00,000 / 2.991 = Rs. 6,68,673.

Advice: Company is advised to borrow and buy not to go for leasing as NPV of cash outflows is lower in case of buying alternative.

Note: Students may note that the cost of capital of the company given in the question is 14% at which cash flows may also be discounted.

(ii) Evaluation from Lessor's Point of View

	1	2	3	4	5
Lease Rent	6,00,000	6,00,000	6,00,000	6,00,000	6,00,000
Less: Depreciation	5,00,000	3,75,000	2,81,250	2,10,938	1,58,203
EBT	1,00,000	2,25,000	3,18,750	3,89,062	4,41,797
Less Tax @ 35%	35,000	78,750	1 , 11,563	1 , 36,172	1,54,629
EAT	EAT	1,46,250	2,07,187	2,52,890	2,87,168
Add Depreciation	5,00,000	3,75,000	2,81,250	2,10,938	1,58,203
Cash Inflows	5,65,000	5,21,250	4,88,437	4,63,828	4,45,371

PV factor @ 14%	0.877	0.769	0.675	0.592	0.519
PV of inflows	4,95,505	4,00,841	3,29,695	2,74,586	2,31,148

Evaluation:

Aggregate PV of cash inflows	17,31,775
Add: PV of salvage value (4,00,000 * 0.519)	2,07,600
Add: Tax shelter on short-term capital loss (4,74,609 – 4,00,000) * 0.35 * 0.519	13,553
PV of all cash inflows	19,52,928
Cost of the machine	20,00,000
NPV	-47,072

Hence, leasing at this rate is not feasible

Question 2(b)

(a) Calculation of maximum price per share at which PQR Ltd. can offer to pay for XYZ Ltd.'s share

Market Value (10,00,000 x Rs. 24)	Rs. 2,40,00,000
Synergy Gain	Rs. 80,00,000
Saving of Overpayment	Rs. 30,00,000
	Rs. 3,50,00,000
Maximum Price (Rs. 3,50,00,000/10,00,000)	Rs. 35

(b) Calculation of minimum price per share at which the management of XYZ Ltd.'s will be willing to offer their controlling interest

Value of XYZ Ltd.'s Management Holding (40% of 10,00,000 x Rs. 24)	Rs. 96,00,000
Add: PV of loss of remuneration to top management	Rs. 30,00,000
	Rs. 1,26,00,000
No. of Shares	4,00,000
Minimum Price (Rs. 1,26,00,000/4,00,000)	Rs. 31.50

Question 3(a)

(i) Beta of the Portfolio

Security	Market Price	No. of Shares	Value	ß	Value xß
A	29.40	400	11760	0.59	6938.40
B	318.70	800	254960	1.32	336547.20
C	660.20	150	99030	0.87	86156.10
D	5.20	300	1560	0.35	546.00
E	281.90	400	112760	1 . 16	130801.60
F	275.40	750	206550	1.24	256122.00
G	514.60	300	154380	1.05	162099.00
H	170.50	900	153450	0.76	116622.00
			994450		1095832.30

$$\text{Portfolio Beta} = \frac{10,95,832.30}{9,94,450} = 1 . 102$$

(ii) Theoretical Value of Future Contract Expiring in May and June

$$F = Se^{rt}$$

$$FMay = 8500 \times e^{0.20 \times (2/12)} = 8500 \times e0.0333$$

$e^{0.0333}$ shall be computed using Interpolation Formula as follows:

e0.03	= 1.03045
e0.04	= 1.04081
e0.01	= 0.01036
e0.0033	= 0.00342
e0.0067	= 0.00694

$e^{0.0333}$ = 1.03045 + 0.00342 = 1.03387 or 1.04081 – 0.00694 = 1.03387

According the price of the May Contract

8500 X 1.03387 = Rs. 8788

Price of the June Contract

FMay= 8500 x $e^{0.20}$ x (3/12) = 8500 x $e^{0.05}$= 8500 x 1.05127 = 8935.80

(iii) No. of NIFTY Contracts required to sell to hedge until June

$$\frac{\text{Value of Position to be hedged} \times \beta}{\text{Value of Future Contract}}$$

(A) Total portfolio

$$\frac{994450 \times 1.102}{8850 \times 25} = 4.953 \text{ say 5 contracts}$$

(B) 50% of Portfolio

$$\frac{994450 \times 0.50 \times 1.102}{8850 \times 25} = 2.47 \text{ say 3 contracts}$$

(C) 120% of Portfolio

$$\frac{994450 \times 1.20 \times 1.102}{8850 \times 25} = 5.94 \text{ say 6 contracts}$$

Question 3(b)

In order to find out the NAV, the cash balance at the end of the year is calculated as follows-

Particulars	*Rs.*
Cash balance in the beginning (Rs. 100 lakhs – Rs. 98 lakhs)	2,00,000
Dividend Received	12,00,000
Interest on 7% Govt. Securities	56,000
Interest on 9% Debentures	45,000
Interest on 10% Debentures	50,000
	15,51,000
(-) Operating expenses	5,00,000
Net cash balance at the end	10,51,000
Calculation of NAV	Rs.
Cash Balance	10,51,000
7% Govt. Securities (at par)	8,00,000
50,000 equity shares @ Rs. 175 each	87,50,000
9% Debentures (Unlisted) at cost	5,00,000
10% Debentures @90%	4,50,000
Total Assets	1 , 15,51000
No. of Units	10,00,000
NAV per Unit	Rs. 11.55

Calculation of NAV, if dividend of Rs. 0.80 is paid –

Net Assets (Rs. 1 , 15,51,000 – Rs. 8,00,000)	Rs. 1,07,51,000
No. of Units	10,00,000
NAV per unit	Rs. 10.75

Question 4(a)

Interest and Commission due from Sleepless = Rs. 50 crore (0.10+0.002) = Rs. 5.10 crore

Net Sum Due to Sleepless in each of Scenarios

Scenario 1

Year	PLR	Sum due to Sleepless	Net Sum Due (Rs. Crore)		(Rs. Crore)
1	10.25	50 (10.25 + 0.8)%= 5.525	5.10 –5.525 = - 0.425	0.909	-0.38633
2	10.5	50 (10.50 + 0.8)%= 5.650	5.10 –5.650 = - 0.550	0.826	-0.4543
3	10.75	50 (10.75 + 0.8)%= 5.775	5.10–5.775 = - 0.675	0.751	-0.50693
4	11	50 (11.00 + 0.8)%= 5.900	5.10 –5.900 = - 0.800	0.683	-0.5464
					-1.89395

Scenario 2

Year	PLR	Sum due to Sleepless	Net Sum Due (Rs. Crore)		(Rs. Crore)
1	8.75	50 (8.75 + 0.8)%= 4.775	5.10 –4.775 = 0.325	0.909	0.295425
2	8.85	50 (8.85 + 0.8)%= 4.825	5.10 – 4.825 = 0.275	0.826	0.22715
3	8.85	50 (8.85 + 0.8)%= 4.825	5.10 –4.825 = 0.275	0.751	0.206525
4	8.85	50 (8.85 + 0.8)%= 4.825	5.10 –4.825 = 0.275	0.683	0.187825
					0.916925

Scenario 3

Year	PLR	Sum due to Sleepless	Net Sum Due (Rs. Crore)		(Rs. Crore)
1	7.20	50 (7.20 + 0.8)%= 4.00	5.10–4.00 = 1 . 10	0.909	0.9999
2	7.40	50 (7.40 + 0.8)%= 4.10	5.10 –4.10 = 1.00	0.826	0.826
3	7.60	50 (7.60 + 0.8)%= 4.20	5.10 –4.20 = 0.90	0.751	0.6759
4	7.70	50 (7.70 + 0.8)%= 4.25	5.10 –4.25 = 0.85	0.683	0.58055 3.08235

Decision: Since the NPV of the proposal is positive in Scenario 2 (Best Case) and Scenario 3 (Most likely Case) the proposal of swap can be accepted. However, if management of NoBank is of strong opinion that PLR are likely to be more than 10% in the years to come then it can reconsider its decision.

Question 4(b)

Receipts using a forward contract = 1,00,000/0.02127 = Rs. 47,01,457

Receipts using currency futures

The number of contracts needed is (1,00,000/0.02118)/4,72,000 = 10

Initial margin payable is 10 x Rs. 15,000 = Rs. 1,50,000

On September 1 Close at 0.02133

Receipts = US$1,00,000/0.02133 = 46,88,233

Variation Margin = [(0.02134 – 0.02118) x 10 x 472000/-]/0.02133

OR (0.00016x10x472000)/.02133 = 755.2/0.02133 =35,406

47,23,639

Less: Interest Cost – 1,50,000 x 0.08 x 3/12 =Rs. 3,000

Net Receipts =Rs. 47,20,639

Receipts under different methods of hedging

Forward contract Rs. 47,01,457

Futures Rs. 47,20,639

No hedge

US$ 1,00,000/0.02133 Rs. 46,88,233

The most advantageous option would have been to hedge with futures.

Question 5(a)

As per MM model, the current market price of equity share is:

$$P0 = \frac{1 \times (D_1 + P_1)}{(1 + K_e)}$$

(i) If the dividend is declared

$$100 = \frac{1 \text{ X } (15 + P_1)}{1 + 0.10}$$

$$100 = \frac{15 + P_1}{1.10}$$

$$110 = 15 + P_1$$

$$P_1 = 110 - 15 = 95$$

The market price of the equity share at the end of the year would be Rs. 95

(ii) If the dividend is not declared:

$$100 = \frac{1 \text{ X } (0 + P_1)}{1 + 0.10}$$

$$100 = \frac{P_1}{1.10}$$

$$P1 = 110$$

The Market price of the equity share at the end of the year would be Rs. 110.

(iii) In case the firm pays dividend of Rs. 15 per share out of total profits of Rs. 6,00,000 and plans to make new investment of Rs. 12,00,000, the number of shares to be issued may be found as follows:

Total Earnings	Rs. 6,00,000
- Dividends paid	Rs. 1,50,000
Retained earnings	Rs. 4,50,000
Total funds required	Rs. 12,00,000
Fresh funds to be raised	Rs. 7,50,000
Market price of the share	Rs. 95
Number of shares to be issued (Rs. 7,50,000 / Rs.95)	7,894.74

or, the firm would issue 7895 shares at the rate of Rs. 95

Question 5(b)

Decision Tree showing pay off

Year 0	Year 1	Abandonment Pay off
Rs. 100	130	0
	60	80-60 = 20

First of all we shall calculate probability of high demand (P) using risk neutral method as follows:

8% = p x 30% + (1-p) x (-40%)

0.08 = 0.30 p - 0.40 + 0.40p

p = 0.48 = 0.686
0.70

The value of abandonment option will be computed as follows:

Expected Payoff at Year 1

= p x 0 + [(1-p) x 20]
= 0.686 x 0 + [0.314 x 20]

= Rs. 6.28 crore

Since expected pay off at year 1 is 6.28 crore. Present value of expected pay off will be:

6.28 = 5.81 crore.
1.08

Thus the value of abandonment option (Put Option) is Rs. 5.80 crore.

Question6(a)

ER = Rf + ß (Rm – Rf)

= 8 + 1.5 (12 – 8)

= 8 + 1.5 (4)

=8 +6

=14% or 0.14

Applying Dividend Growth Model for the calculation of per share equilibrium price:

$$ER = \frac{D1}{P0} + g$$

$$0.14 = \frac{3\ (1\ .\ 10)}{P0} + 0.10$$

$$0.14 - 0.10 = \frac{3.30}{P0}$$

$$0.04\ P0 = 3.30$$

$$P0 = \frac{3.30}{0.04} = \text{Rs. } 82.50$$

Per share equilibrium price will be Rs. 82.50.

Question 6 (b)

Identify: Foreign currency is an asset. Amount $ 3,50,000.

Create: $ Liability.

Borrow: In $. The borrowing rate is 9% per annum or 2.25% per quarter.

Amount to be borrowed: 3,50,000 / 1.0225 = $ 3,42,298.29

Convert: Sell $ and buy £. The relevant rate is the As

(Note: This is an indirect quote). Amount of £s received on conversion is 2,15,214.27 (3,42,298.29/1.5905).

Invest: £ 2,15,214.27 will be invested at 5% for 3 months and get £ 2,17,904.45

Settle: The liability of $3,42,298.29 at interest of 2.25 per cent quarter matures to $3,50,000 receivable from customer.

Using forward rate, amount receivable is = 3,50,000 / 1.6140 = £2,16,852.54

Amount received through money market hedge = £2,17,904.45

Gain = 2,17,904.45 – 2,16,852.54 = £1,051.91

So, money market hedge is beneficial for the exporter

Question 7(a)

Some of the techniques used for economic analysis are:

(a) Anticipatory Surveys: They help investors to form an opinion about the future state of the economy. It incorporates expert opinion on construction activities, expenditure on plant and machinery, levels of inventory – all having a definite bearing on economic activities. Also future spending habits of consumers are taken into account.

(b) Barometer/Indicator Approach: Various indicators are used to find out how the economy shall perform in the future. The indicators have been classified as under:

(1) Leading Indicators: They lead the economic activity in terms of their outcome. They relate to the time series data of the variables that reach high/low points in advance of economic activity.

(2) Roughly Coincidental Indicators: They reach their peaks and troughs at approximately the same in the economy.

(3) 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.

All these approaches suggest direction of change in the aggregate economic activity but nothing about its magnitude.

(c) Economic Model Building Approach: In this approach, a precise and clear relationship between dependent and independent variables is determined. GNP model building or sectoral analysis is used in practice through the use of national accounting framework.

Question 7(b)

Clearing house is an exchange-associated body charged with the function of ensuring (guaranteeing) the financial integrity of each trade. Orders are cleared by means of the clearinghouse acting as the buyer to all sellers and the seller to all buyers. Clearing houses provide a range of services related to the guarantee of contracts, clearance and settlement of trades, and management of risk for their members and associated exchanges.

Role of Clearing Houses

- It ensures adherence to the system and procedures for smooth trading.
- It minimises credit risks by being a counter party to all trades.
- It involves daily accounting of all gains or losses.
- It ensures delivery of payment for assets on the maturity dates for all outstanding contracts.

It monitors the maintenance of speculation margins.

Question 7(c)

Inter Bank Participation Certificate (IBPC): The Inter Bank Participation Certificates are short term instruments to even out the short term liquidity within the Banking system particularly when there are imbalances affecting the maturity mix of assets in Banking Book.

The primary objective is to provide some degree of flexibility in the credit portfolio of banks. It can be issued by schedule commercial bank and can be subscribed by any commercial bank.

The IBPC is issued against an underlying advance, classified standard and the aggregate amount of participation in any account time issue. During the currency of the participation, the aggregate amount of participation should be covered by the outstanding balance in account.

There are two types of participation certificates, with risk to the lender and without risk to the lender. Under 'with risk participation', the issuing bank will reduce the amount of participation from the advances outstanding and participating bank will show the participation as part of its advances. Banks are permitted to issue IBPC under 'with risk' nomenclature classified under Health Code-I status and the aggregate amount of such participation in any account should not exceed 40% of outstanding amount at the time of issue. The interest rate on IBPC is freely determined in the market. The certificates are neither transferable nor prematurely redeemable by the issuing bank.

Under without risk participation, the issuing bank will show the participation as borrowing from banks and participating bank will show it as advances to bank.

The scheme is beneficial both to the issuing and participating banks. The issuing bank can secure funds against advances without actually diluting its asset-mix. A bank having the highest loans to total asset ratio and liquidity bind can square the situation by issuing IBPCs. To the lender, it provides an opportunity to deploy the short-term surplus funds in a secured and profitable manner. The IBPC with risk can also be used for capital adequacy management.

Question 7 (d)

FCCBs are important source of raising funds from abroad. Their salient features are –

1. FCCB is a bond denominated in a foreign currency issued by an Indian company which can be converted into shares of the Indian Company denominated in Indian Rupees.

2. Prior permission of the Department of Economic Affairs, Government of India, Ministry of Finance is required for their issue

3. There will be a domestic and a foreign custodian bank involved in the issue

4. FCCB shall be issued subject to all applicable Laws relating to issue of capital by a company.

5. Tax on FCCB shall be as per provisions of Indian Taxation Laws and Tax will be deducted at source.

6. Conversion of bond to FCCB will not give rise to any capital gains tax in India.

Question 7 (e)

The interface of strategic management and financial policy will be clearly understood if we appreciate the fact that the starting point of an organization is money and the end point of that organization is also money. No organization can run an existing business and promote a new expansion project without a suitable internally mobilized financial base or both internally and externally mobilized financial base.

Sources of finance and capital structure are the most important dimensions of a strategic plan. The generation of funds may arise out of ownership capital and or borrowed capital. A company may issue equity shares and / or preference shares for mobilizing ownership capital.

Along with the mobilization of funds, policy makers should decide on the capital structure to indicate the desired mix of equity capital and debt capital. There are some norms for debt equity ratio. However this ratio in its ideal form varies from industry to industry. It also depends on the planning mode of the organization under study.

Another important dimension of strategic management and financial policy interface is the investment and fund allocation decisions. A planner has to frame policies for regulating investments in fixed assets and for restraining of current assets. Investment proposals mooted by different business units may be addition of a new product, increasing the level of operation of an existing product and cost reduction and efficient utilization of resources through a new approach and or closer monitoring of the different critical activities.

Now, given these three types of proposals a planner should evaluate each one of them by making within group comparison in the light of capital budgeting exercise.

Dividend policy is yet another area for making financial policy decisions affecting the strategic performance of the company. A close interface is needed to frame the policy to be beneficial for all. Dividend policy decision deals with the extent of earnings to be distributed as dividend and the extent of earnings to be retained for future expansion scheme of the firm.

It may be noted from the above discussions that financial policy of a company cannot be worked out in isolation of other functional policies. It has a wider appeal and closer link with the overall organizational performance and direction of growth. These policies being related to external awareness about the firm, specially the awareness of the investors about the firm, in respect of its internal performance. There is always a process of evaluation active in the minds of the current and future stake holders of the company. As a result preference and patronage for the company depends significantly on the financial policy framework. And hence attention of the corporate planners must be drawn while framing the financial policies not at a later stage but during the stage of corporate planning itself