

STRATEGIC FINANCIAL MANAGEMENT – SEMESTER-5**Marks**

- Q. 2 (a)** The draft financial plan, for profits, dividends, assets required and funding can be drawn up, as follows:

	Rs. '000'							
	Current Year	Year 1	Year 2	Year 3	Year 4	Year 5		
Revenues	20,000	21,200	22,800	24,800	27,200	30,000		
Profit for the year (EAT)	2,000	2,120	2,280	2,480	2,720	3,000	2	
Dividends (50% of profit after tax)	1,000	1,060	1,140	1,240	1,360	1,500	2	
Retained earnings	1,000	1,060	1,140	1,240	1,360	1,500		
Total assets less current liabilities (125% of sales)	25,000	26,500	28,500	31,000	34,000	37,500	2	
Equity (increased by retained earnings)	17,500	18,560	19,700	20,940	22,300	23,800	2	
Maximum debt (30% of debt + equity)	7,500	7,954	8,443	8,974	9,557	10,200	2	
	25,000	26,514	28,143	29,914	31,857	34,000		
Funds available (Shortfall in funds)*	–	14	(357)	(1,086)	(2,143)	(3,500)	2	
OR	2	+	2	+	2	+	2	= 12

* Given maximum gearing of 30% and no new issue of shares = funds available – total assets less current liabilities

- (b)** These figures show that the financial objectives of the company are not compatible with each other, and adjustments will have to be made.

- There will be an increasing shortfall of funds from year 2 onwards, unless new shares are issued or the gearing level rises above 30%. 1
- In year 2 and 3, the shortfall can be eliminated by retaining a greater percentage of profits, but this may have a serious adverse effect on the share price. In year 4 and year 5, the shortfall in funds cannot be removed even if dividend payments are reduced to nothing. 1
- The net asset turnover appears to be low. If net asset turnover cannot be improved, it may be possible to increase the profit revenues ratio by reducing costs or increasing selling prices. 1

- Q. 3 (a) (i)** Market price per share following the stock repurchase:

NI = Rs. 4,000,000; Shares = 2,000,000; P_0 = Rs. 32; Repurchase = 20%

Repurchase = $0.2 \times 2,000,000$ = 400,000 shares ½

Repurchase amount = Rs. 12,800,000 ½

P/E = $\frac{\text{Rs. 32}}{\text{Rs. 2}}$ = 16 1

EPS_{Old} = $\frac{\text{NI}}{\text{Shares}}$ = $\frac{\text{Rs. 4,000,000}}{2,000,000}$ = Rs. 2.00 1

EPS_{New} = $\frac{\text{Rs. 4,000,000}}{2,000,000 - 400,000}$ = $\frac{\text{Rs. 4,000,000}}{1,600,000}$ = Rs. 2.50 1

Price_{New} = $EPS_{\text{New}} \times P/E$ = Rs. 2.50(16) = Rs. 40 1

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- (ii) Market price per share change if the company pays out the funds:
- | | | | |
|---------------------------------|---|---------------------------------|---|
| Rs. 12,800,000/2,000,000 shares | = | Rs. 6.4 per share cash dividend | 1 |
| Share price after dividend | = | Rs. 32 – Rs. 6.40 = Rs. 25.60 | 1 |

- (b) (i) Number of shares outstanding with 20%:
- | | Rupees | |
|----------------------------|------------|---|
| Share capital (Rs. 10 par) | 4,800,000 | ½ |
| Share premium | 7,200,000 | ½ |
| Retained earnings | 12,000,000 | ½ |
| Shareholders' equity | 24,000,000 | ½ |
- Present number of common share = Rs. 4,000,000 / Rs. 10 par value = 400,000
- 20% stock dividend = 400,000 x 0.20 = 80,000
- No. of shares outstanding after stock dividend = 400,000 + 80,000 = 480,000 1

- (ii) Per share market price after the 20% stock dividend:
- The total market value of the firm before the stock dividend is = Rs. 60 x 400,000 shares = Rs. 24 million
- Market price per share after the stock dividends = Rs. 24 million ÷ 480,000 shares = Rs. 50 per share 1

- (c) (i) Stock price:
- $P_0 = \text{Rs. } 125; \quad \text{Split} = 5\text{-for-1}; \quad \text{New } P_0 = ?$
- $P_{0 \text{ New}} = \text{Rs. } 125 \div 5 = \text{Rs. } 25$ 1
- (ii) Last year's dividend per share:
- DPS after split = Rs. 1.50
- Equivalent pre-split dividend = Rs. 1.50(5) = Rs. 7.50 1
- New equivalent dividend = Last year's dividend x 1.09 1
- Rs. 7.50 = Last year's dividend x 1.09
- Last year's dividend = Rs. 7.50 ÷ 1.09 = Rs. 6.88 1

Q. 4 (a) Debt finance:

If the expansion is wholly financed by debt capital:

	Rs. '000'	
Annual income from expansion	1,200	
Less: Interest on debt finance (9% x Rs. 5,000)	450	½
Annual income from expansion attributable to equity shareholders	750	½
Add: Current annual earnings on equity (19% x Rs. 36,000)	6,840	½
Total annual earnings on equity	7,590	½

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			Marks	
The value of the equity shares at an increased cost of capital of 20%	=	$\frac{\text{Rs. } 7,590,000}{0.20}$	= Rs. 37,950,000	1
An increase in the value of equity shares	=	Rs.(37,950,000 – 36,000,000)	= Rs. 1,950,000	1

(b) Mix of debt and equity:

The net present value (NPV) of the expansion can be calculated using WACC of 15%. The additional annual income is expected to be Rs. 1,200,000 to perpetuity, and the initial capital outlay is Rs. 5,000,000.

$$\text{NPV of expansion} = \frac{\text{Rs. } 1,200,000}{0.15} - \text{Rs. } 5,000,000 = \text{Rs. } 3,000,000 \quad 2$$

This NPV is positive and will increase the value of the equity shares only. As a result of the expansion the total market value of the company will increase by Rs. 8 million as under:

	Rs. '000'	
NPV of expansion	3,000	½
Add: Additional capital	5,000	½
	8,000	

If the market values of equity and debt are to be maintained in the total market value of the company, it must be split:

	Rs.	Rs. '000'	
Increase in MV of equity (60%)	(60%)	4,800	½
Increase in MV of debt (40%)	(40%)	3,200	½
		8,000	

The Rs. 5,000,000 of initial capital should, therefore, be raised as follows:

	Rs. '000'	
Equity: Increase in MV of equity	4,800	
Less: NPV of project	3,000	
New equity capital issued	1,800	1
Debt	3,200	
	5,000	1

Thus the MV of the debt will increase by the amount of the new debt capital issued, i.e. Rs.3,200,000.

Working:

Weighted Average Cost of Capital (WACC):

Funds	Market Value (Rs. '000')	Proportion	Cost	WACC	
Equity	36,000	0.6	19%	11.4%	1
Debentures	24,000	0.4	9%	3.6%	1
	60,000	1.0		15.0%	

STRATEGIC FINANCIAL MANAGEMENT – SEMESTER-5**Marks****(c)** Viable means of financing:

- If the expansion is wholly financed by debt capital then the shareholders' wealth will increase by Rs. 1,950,000. 1
- On the other hand, if the debt-equity ratio is maintained at its current level by the issue of a mix of debt and equity in the appropriate proportions, shareholders will benefit by an increase in their wealth of Rs. 3,000,000. 1
- Assuming the company's objective is to maximize the wealth of its shareholders then it should follow Mr. Shamsi's proposal and issue a mixture of debt and equity. 1

Q. 5 (a) (i) Net present value and profitability index:

							Rs. in million		
Project	Cash Inflows	Discount Factor @ 12%	PV	Cash Outlay	NPV	Profitability Index $\left(\frac{\text{Present value of cash inflows}}{\text{Initial outlay}}\right)$			
U	1.400	3.605	5.047	4.920	0.127	$\frac{5.047}{4.920}$	= 1.026	1+½	
	1.500	0.893	1.340						
	1.740	0.797	1.387						
V	1.280	0.712	0.911						
			3.638	3.600	0.038	$\frac{3.638}{3.600}$	= 1.010	2+½	
	0.960	1.690	1.622						
	1.260	0.712	0.897						
W	1.460	0.636	0.929						
			3.448	3.500	(0.052)	$\frac{3.448}{3.500}$	= 0.985	2+½	
X	1.240	3.037	3.766	3.600	0.166	$\frac{3.766}{3.600}$	= 1.046	1+½	
	0.800	0.893	0.714						
	1.000	0.797	0.797						
	1.200	0.712	0.854						
Y	1.400	0.636	0.890						
	0.800	0.567	0.454						
			3.710	3.600	0.110	$\frac{3.710}{3.600}$	= 1.031	2+½	
	0.700	0.893	0.625						
Z	1.640	1.509	2.475						
			3.100	3.000	0.100	$\frac{3.100}{3.000}$	= 1.033	1+½	

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(ii) Project ranks:

Project Rankings	NPV	PI
1	X	X
2	U	Z
3	Y	Y
4	Z	U
5	V	V
6	W	W

$$1 + 1 = 2$$

The rankings differ because NPV is an absolute measure whereas the profitability index is a relative measure that takes into account the different investment cost of each project.

(iii) Project 'W' has a negative NPV. The following are potential combinations of projects.

Rs. in million					
Project	Initial Outlay	Total NPV	% Taken	Cumulative Outlay	Actual NPV
X	3.600	0.166	100.00%	3.600	0.166
U	4.920	0.127	100.00%	8.520	0.127
Y	3.600	0.110	100.00%	12.120	0.110
Z	3.000	0.100	9.33%	12.400	0.009
V	3.600	0.038	0.00%	12.400	–
					0.412

Accepting projects 'X', 'U', 'Y' and partially 'Z' will maximize NPV amounting to Rs. 0.412 million. This combination will require a total capital outlay of Rs. 12.4 million.

(b) Proposed expansion:

		Rupees
Cash Inflow	Probability	Amount
1,600,000	0.25	400,000
1,120,000	0.50	560,000
896,000	0.25	224,000
Expected value of sale		1,184,000
Contribution (Rs. 1,184,000 x 0.55)		651,200
Less: Fixed costs		180,000
Taxable profits		471,200
Tax at 35%		164,920

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Net present value:	Rupees						
	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	
Contribution less fixed costs	471,200	471,200	471,200	471,200	471,200		1
Scrap value					110,000		1
Tax payable	(82,460)	(164,920)	(164,920)	(164,920)	(164,920)	(82,460)	1
Net cash flow	388,740	306,280	306,280	306,280	416,280	(82,460)	1
Discount factor @ 10%	0.909	0.826	0.751	0.683	0.621	0.564	1
Present value	353,365	252,987	230,016	209,189	258,510	(46,507)	1
OR	1 +	1 +	1 +	1 +	1 +	1	= 6

Decision:

The expansion of gymnasium should be undertaken as it shows positive NPV of Rs.157,560 (Total present value Rs. 1,257,560-investment outlay Rs. 1,100,000).

Q. 6 (a) Workings:

Moon Ltd.:

Current EPS	=	$\frac{\text{Total earnings}}{\text{Number of Shares}}$	=	$\frac{\text{Rs. 80 million}}{80 \text{ million}}$	=	Re. 1	1
P/E ratio					=	18	
Current market price of shares			=	18 x Re.1	=	Rs. 18	1

Star Ltd.:

Current EPS	=	$\frac{\text{Total earnings}}{\text{Number of Shares}}$	=	$\frac{\text{Rs. 60 million}}{24 \text{ million}}$	=	Rs. 2.5	1
P/E ratio					=	14	
Current market price of shares			=	14 x Re.2.5	=	Rs. 35	1

The bid price is 4 Moon Ltd., shares for every 3 Star Ltd., shares:

Value of 3 Star Ltd., shares	=	4 x 18	=	72	
Bid value per Star Ltd., share	=	72 / 3	=	24 per share	
Total value of the proposed bid, for Star Ltd., shares	=	24 million x Rs.24	=	Rs. 576 million	1
The issue of new Moon Ltd., shares for proposed bid	=	24 million x 4 ÷ 3	=	32 million	1

(b) Total earnings after takeover:

	Rs. in million	
Moon Ltd., earnings	80	
Star Ltd., earnings	60	
Savings from the acquisition	30	
	<u>170</u>	1
Number of shares (Rs.80 million + Rs.32 million)	112	1

EPS following the takeover	=	Rs.170 million ÷ Rs.112 million	=	Rs. 1.518	1
Share price of Moon Ltd., after the takeover, assuming a P/E ratio of 18	=	1.518 x 18	=	Rs. 27.32	1

STRATEGIC FINANCIAL MANAGEMENT – SEMESTER-5**Marks****(c)** Holder of 5,000 shares in Moon Ltd.:

		Rupees	
Value of shares before the takeover	(5,000 x Rs. 18)	90,000	½
Value of shares after the takeover	(5,000 x Rs. 27.32)	136,600	½
Increase in value of investment		46,600	

Holder of 5,000 shares in Star Ltd.:

		Rupees	
Value of 5,000 shares before the takeover	(5,000 x Rs. 35)	175,000	½
Value of shares after the takeover	(6,667 x Rs. 27.32)	182,142	½
Increase in value of investment		7,142	

(d) The takeover would **increase the total value** of the **equity shares** of the companies, on the assumption that a P/E ratio of 18 can be maintained. There are two reasons for this increase in value.

- 1- The earnings of Star Ltd., will be re-rated from a P/E of 14 to a P/E of 18. ½
- 2- There will be savings of Rs.30 million, adding Rs. 540 million to equity values. (Rs. 30 million x 18 times). ½

If above mentioned assumptions turn out to be over optimistic, the value of Moon Ltd., shares after the takeover will be lower than Rs. 27.32, and there would be a serious risk that the value of the investment of Star Ltd., shareholders would fall as a result of the takeover. 1

Under the terms of the current bid, Moon Ltd., shareholders would enjoy an **increase in the value of their investment** by (Rs. 46,600 ÷ Rs. 90,000) almost 52%. Star Ltd., shareholders would also expect some increase in the value of their investment but only by (Rs.7,142 ÷ Rs.175,000) about 4%. The offer from Moon Ltd., is therefore too low, and the directors of Star Ltd., would recommend rejection of the bid on these grounds. 1

THE END