Marks

Q. 2 **(a)** Financing cost of debtors without the factoring arrangement:
Since the sales are going to be double debtors for coming year will be also doubled.
Rs.20,000,000 x 2 x 12% = Rs. 4,800,000 1

Finance cost of factoring debtors:

Debtors 2 x 50,000,000 x $\frac{120}{365}$ = 32,876,712

75% of debtors to be factored	= 24,657,534	1
Cost of financing (factoring) 24,657,534 x 14%	= 3,452,055	1
25% of debtors still be financial by overdraft		
(32,876,712 x 25% = 8,219,178 x 12%)	986,301	1
Factor service charges 100,000,000 x 1.25% fee	1,250,000	1
Saving in credit control cost	(500,000)	1
Net cost of factoring	5,188,356	1

Net disadvantage of factoring (5,188,356 – 4,800,000) = 388,356 1
On financial ground, it will not be viable to enter into factoring arrangement as it is more expensive by Rs.388,356 than the current system of financing with bank overdraft. 1

(b)
(i)
(A) $EOQ = \sqrt{\frac{2x(2,000x52)\,2,250}{300}}$
= 1,249 units 1

(B) Total Cost

Ordering cost	$\frac{104,000}{1,249}$	x 2,250 =	187,350	1
Holding cost	$\frac{1,249}{2}$	x 300 =	187,350	1
		Total cost	374,700	

(ii) New supplier
(A) $EOQ = \sqrt{\frac{2x104,000x7500}{276}}$
= 2,377 units 1

(B) Ordering Cost

Ordering cost	$\frac{104,000}{2,377}$	x 7,500 = Rs.	328,085	1
Holding cost	$\frac{2,377}{2}$	x 276 =	328,085	1
		Total cost	656,170	

(iii) Saving in purchase price

104,000 units x (3,000 – 2,994) =	624,000	1
Net holding cost	32,170	1

On the financial grounds it would be financially beneficial to change the supplier as the overall saving of Rs.342,530 (32,170 – 374,700). 1

Marks

Q. 3

Income Statement

	Rs. in million	Marks
Net sales	600.00	2
Cost of goods sold	360.00	2
Selling, general and administrative expenses	30.00	
Depreciation	60.00	
Earnings before interest and taxes (EBIT)	150.00	
Interest expenses (1/8 of EBIT)	18.75	1
Income before taxes	131.25	
Taxes	90.66	1
Net income	40.59	1

Balance Sheet

	This year	Last year	Rs. in million	Marks
Assets:				
Cash and marketable securities	33	60		2
Accounts receivables	132	102		1
Inventories	66	78		2
Total current assets	231	240		1
Liabilities and shareholders' equity				
Accounts payable	75	60		
Notes payable	90	105		
Total current liabilities	165	165		
Long-term debt	72	60		1
Shareholders' equity	108	90		1
Total liabilities and shareholders' equity	345	315		

Working:

Sales:

$$\text{Accounts Receivable Turn over} = \frac{365 \text{ days}}{71.2 \text{ days}} = 5.1264$$

$$\text{Accounts Receivable Turn over} = \frac{\text{Sale}}{\text{Average A/R}} = 5.1264$$

$$\frac{\text{Sale}}{(102 + 132)/ 2} = 5.1264$$

$$\text{Sale} = 5.1264 \times 117 = \mathbf{600}$$

Cost of goods sold:

$$\frac{\text{Cost of good sold}}{\text{Average inventory}} = \text{Inventory turnover}$$

$$\frac{\text{Cost of good sold}}{(\text{Beginning inventory} + \text{Ending inventory})/ 2} = 5$$

$$\frac{\text{Cost of good sold}}{(78 + 66)/ 2} = 5$$

$$\frac{\text{Cost of good sold}}{72} = 5$$

$$\text{Cost of good sold} = 72 \times 5 = \mathbf{360}$$

Interest payments:

$$\frac{\text{EBIT}}{\text{Times interest earned}} = \frac{150}{8} = \mathbf{18.75}$$

Marks

Net income:

Average assets $= \frac{315 + 345}{2} = 330$

$\frac{\text{Net income + interest}}{\text{Average assets}} = \frac{\text{Net income + interest}}{330} = 0.18$

$= 59.34$

Net income + interest	=	59.34
Interest		18.75
Net income		**40.59**

Current assets:

Current liabilities:

Accounts payable	=	75
Notes payable	=	90
		165

$\frac{\text{Current assets}}{\text{Current liabilities}} = 1.4$

$\frac{\text{Current assets}}{165} = 1.4$

Current assets = 165 x 1.4 = **231**

Cash marketable securities:

$\frac{\text{Cash + Marketable Securities}}{\text{Current Liabilities}} = \text{Cash ratio}$

$\frac{\text{Cash + Marketable Securities}}{165} = 0.2$

Cash + Marketable Securities = 165 x 0.2 = **33**

Accounts Receivable

Accounts Receivable = CA – (Cash & Marketable Securities + Inventory)
= 231 – (33 + 66)
= 231 – 99 = **132**

Inventory:

$\frac{\text{Current assets – Inventory}}{\text{Current liabilities}} = \text{Quick ratio}$

$\frac{231 - \text{inventory}}{165} = 1$

231 – inventory = 165
– inventory = 165 – 231
Inventory = **66**

Shareholders equity:

Average Equity $= \frac{\text{Net income}}{\text{Return on equity}} = \frac{40.59}{0.41} =$ **99**

Shareholder equity of current year 99 x 2 = 198 – 90 = **108**

Long term debt:

Long term debt ratio $= \frac{\text{Long term debt}}{\text{Long term debt + equity}} = \frac{72}{72 + 108} = \frac{72}{180} =$ **0.4**

= 72

Marks

Q. 4 (a) $PV = \frac{1.4 \text{ million}}{WACC - 0.05}$

WACC = E/V * Ke + D/V Kd (1 – t)

Equity multiplier = 1+ Debt equity ratio

= 1 + 0.7

Equity Multiplier = 1.7 1

Debt = $\frac{0.7}{1.7}$ = 0.41, Equity = $\frac{1.0}{1.7}$ = 0.59 2

WACC = (0.59) (0.13) + (0.41) (0.055)

= 0.0767 + 0.02255

= 0.09925

WACC = 9.925% 2

WACC + Adjustment factor

= 9.925% + 2% = 11.925% 1

$PV = \frac{1.4 \text{ million}}{0.11925 - 0.05}$

PV = Rs. 20.216 million 2

Benefit = PV – cost of investment

= Rs. 20.216 m – 20 m

The company will have benefit of 216,000. 1

As the initial investment is 20 million and PV is 20.216 million, so the company should take the project. 1

(b) Because Syma Limited uses both debt and equity to finance its operations, we first need the weighted average flotation cost. As in part (a), the percentage of equity financing is 0.59%, so the weighted average flotation cost is:

fA = (E/V) x fE + (D/V) X fD

= 0.59 x 16% + 0.41 x 2%

= 0.0944 + 0.0082 = 0.1026 2

If Syma Limited needs Rs. 20 million after flotation costs, then the true cost of the project is Rs. 20 million/(1 - fA)

= Rs. 20 million / 1 – 0.1026

= Rs. 20 million/0.8974

= Rs. 22.287 million. 1

Loss on the project = Rs. 20.216 m – 22.287 m = 2.071 m 1

The company will have loss of Rs. 2.071 million. Therefore, the project is not viable. 1

Marks

Q. 5 (a) The six major factors that complicate financial management in multinational firms are:

Different currency denominations: Cash flows in various parts of multinational corporate systems will be denominated in different currencies. Hence, an analysis of exchange rates, and the effect of fluctuating currency values, must be included in all financial analyses.

Economic and legal ramifications: Each country in which a firm operates will have its own unique political and economic institutional differences can cause significant problems when the corporation tries to coordinate and control worldwide operations. For example, tax laws vary from country to country, and what makes sense in one country regarding taxes may not in another.

Language differences: The ability to communicate is critical in all business matters. Although English is now spoken by most international business people, knowledge of other languages remains critical to the success of multinational firms.

Cultural differences: Different counties, and even different regions in a single country, have unique cultural heritages that shape values and influence the role of business in the society. Such differences affect consumption patterns, defining the appropriate firm goals, attitudes toward risk taking, dealing with employees, and so on. For example, most Japanese workers view their jobs as a lifetime commitment, while many American workers view theirs as temporary until something better comes along.

Role of governments: Except for certain industries, the role of government in the is to create an environment which promotes free enterprise and competition. However, in many counties, the government takes a much more active role in business affairs, and in some countries, a multinational firm must deal directly with the government to conduct business.

Political risk: Nations exercise sovereign rights over their people and property. Thus, a government can seize the assets of a multi-national corporation, or restrict the repatriation of earnings from the country, and the affected company has no recourse for recovery.

Pointing out 5 areas @ 1mark 5

Explaining 5 areas @ 1 mark 5

(b)

Rs.

Year	Cash flow	Investment	Net cash flow	PV Factor @ 18%	Present Value of Net cash flow
1	92,000,000	40,000,000	52,000,000	0.8470	44,044,000
2	105,800,000	40,000,000	65,800,000	0.7180	47,244,400
3	121,670,000	40,000,000	81,670,000	0.6090	49,737,030
4	139,920,520	40,000,000	99,920,520	0.5160	51,558,988
5	160,908,560	40,000,000	120,908,560	0.4370	52,837,041
6	185,044,880	40,000,000	145,044,880	0.3700	53,666,606
7	212,801,600	40,000,000	172,801,600	0.3140	54,259,702
8	244,721,840	40,000,000	204,721,840	0.2660	54,456,009
9	281,430,120	40,000,000	241,430,120	0.2250	54,321,777
10-25	323,644,640	40,000,000	283,644,640	1.1639	330,133,996
			Total Present value =		792,259,550

½ mark for each year's cash flow 5

½ mark for each year's PV of cash flow 5

The maximum price that is justified is approximately Rs. 792.26 million. 1

To arrive at the discount rate for cash flows going from years 10 – 25, we subtract the discount factor for 9 years of annuity payments, 4.3030, from that for 25 years, 5.4669. The difference is 5.4669 – 4.3030 = 1.1639. 1

Marks

Q. 6 (a) (i) Expected annual cash flows:

Project X:

Probability	x	Probable Cash Flow	=	Probable Cash Flow
0.2		3,500		700
0.6		3,875		2,325
0.2		4,250		850
Expected annual cash flow				3,875

1

Project Y:

Probability	x	Probable Cash Flow	=	Probable Cash Flow
0.2		Rs. 0		Rs. 0
0.6		3,875		2,325
0.2		9,500		1,900
Expected annual cash flow				4,225

1

Coefficient of variation:

$$CV = \frac{\text{Standard deviation}}{\text{Expected value}} = \frac{\sigma \text{ NPV}}{\text{Expected NPV}}$$

Project X:

$$\sigma X = \sqrt{(-Rs.375)^2(0.2) + (Rs.0)^2(0.6) + (Rs.375)^2(0.2)} = Rs.237.17$$

1

Project Y:

$$\sigma Y = \sqrt{(-Rs.4,225)^2(0.2) + (-Rs.350)^2(0.6) + (Rs.5,275)^2(0.2)} = Rs.3,034.59$$

1

CV_X = Rs.237.17 / Rs.3,875 = 0.0612. 1

CV_Y = Rs.3,034.59 / Rs.4,225 = 0.7182. 1

(ii) Project Y is the riskier project because it has the greater variability in its probable cash flows, whether measured by the standard deviation or the coefficient of variation. Hence, Project Y is evaluated at the 12% cost of capital, while Project X requires only a 10% cost of capital.

Project X:

NPV = 3,875 + (3,875 x 2.4868)
= 3,875 + 9,637 = 5,762 1

Project Y:

NPV = 3,875 + (4,225 x 2.4019)
= 3,875 + 10,148 = 6,273 1

Project Y has the higher NPV; therefore, the firm should accept Project Y. 1

(iii) The portfolio effects from Project Y would tend to make it less risky than otherwise. This would tend to reinforce the decision to accept Project Y. 1

Marks

Q. 6 (b) Cash Flow (Rupees in million)

	(i)			Marks	(ii)	
TIME	**INITIAL PROJECT**	**DISCOUNT FACTOR @ 14%**	**PV**		**SCENARIO 1 PROBABILITY = .3**	**SCENARIO 2 PROBABILITY = .3**
1	-9.0	0.8772	-7.8948	½		
2	-9.0	0.7695	-6.9255	½		
3	1.5	0.675	1.0125	½		
4	3.0	0.5921	1.7763	½		
5	6.0	0.5194	3.1164	½	– 15	– 15
6	6.0	0.4556	2.7336	½	9	6
7	4.5	0.3996	1.7982	½	9	6
8	1.5	0.3506	0.5259	½	9	6
9		0.3075			9	6
10		0.2697			9	6
NPV			-3.8574		* 8.26	** 2.91

The project has an NPV of Rs. – 3.8574 million and it would be rejected. 1

*I. –15(0.5194) + 9(1.783) 1
7.791 + 16.047
= 8.256

**II. –15(0.5194) + 6 (1.783) 1
–7.791 + 10.698
= 2.907

Option value = .3(8.26) +.3(2.91)+ .4(0)
= 3.351 million 1

Worth of project = -3.8574 + 3.351 = - 0.51 million 1

While the option value raises the worth of the project substantially, it does not entirely offset the initial project's negative NPV. Therefore, we would reject the project. 1

THE END