

FINAL EXAMINATION

GROUP III

(SYLLABUS 2008)

SUGGESTED ANSWERS TO QUESTIONS

DECEMBER 2010

Paper- 12 : FINANCIAL MANAGEMENT & INTERNATIONAL FINANCE

Time Allowed : 3 Hours

Full Marks : 100

The figures in the margin on the right side indicate full marks.

Answer Question No. 1 from Part A which is compulsory and any five questions from Part B.

Working notes should form part of the answer.

Please : (i) answers all bits of a question at one place.

(ii) open a new page for answer to a new question.

PART A (25 Marks)

Q. 1. (a) In each of the cases given below, one out of four answers is correct. Indicate the correct answer (= 1 mark) and give your workings/reasons briefly in support of your answer (= 1 mark) :

(i) The computed financial leverage based on the given data below

Net worth	Rs. 25,00,000
Debt/Equity	3 : 1
Interest rate	12%
Operating profit	Rs. 20,00,000, is

A. 2.43

B. 2.16

C. 1.82

D. 1.56

- (ii) The following information relates to Suraj Chemicals Ltd. —

Earnings per share, Rs. 4

Dividend payout ratio, 45%

Rate of return required by shareholders, 15%.

Assuming that the Gordon Valuation model holds, the rate of return that should be earned on investments by Suraj Chemicals to ensure that the market price stays at Rs. 60 is

- A. 15.2%
B. 20.89%
C. 21.8%
D. 23.2%

- (iii) The following market quotes are available. Assume there are no transaction costs be possible, arbitrage gains on Rs. 10,00,000 from the middle rates given below :

Rs. 76,200 = £ 1 in London

Rs. 46,600 = \$ 1 in Delhi

\$ 1.5820 = £ 1 in New York

will be

- A. Rs. 33,577
B. Rs. 30,000
C. Rs. 40,232
D. Rs. 25,300

- (iv) Durga Farm Supplies has an 8 per cent return on total assets of Rs. 3,00,000 and a net profit margin of 5 per cent. Its sales are then

- A. Rs. 37,50,000
B. Rs. 4,80,000
C. Rs. 3,00,000
D. Rs. 15,00,000

- (v) The face value of a 364-day T-bill is Rs. 100. If the purchase price is Rs. 86. then the yield on such a bill is

- A. 12.45%
B. 13.36%
C. 16.32%
D. 16.56%

- (vi) Zed Ltd. has a Beta of 1.15. Return on market portfolio is 14%. Return on Zed is 15%. Risk free rate is 5%. The value of Alpha for Zed is, then

- A. - 3.48%
B. - 0.30%
C. + 0.50%
D. + 1.22%

- (vii) If back orders can be taken (at an added cost per item back ordered),

- A. EOQ will decrease
B. EOQ will increase
C. Lead time will decrease
D. No change will occur. Back orders do not affect the EOQ model.

2×7=14

- (b) Write if each of the following sentences is T (true) or F (false) :

- (i) For a Company, Inventory values in the Financial Statement are certified by the Statutory Auditor.
(ii) Sensitivity Analysis not only measures a risk but also helps in reducing it while appraising a project.
(iii) Because of tax advantage, the cost of equity capital varies directly with the proportion of debt capital.
(iv) While designing the capital structure of a business the earnings capacity becomes a less important factor than the each flow ability.
(v) The size of spread for a given currency decreases as the period of maturity increases in forward exchange rate contracts.
(vi) In import transactions, it is preferable to accept invoices in home currency only where the rupee is likely to depreciate against the foreign currency.
(vii) Swapping from fixed to floating may save the original borrower if interest rates decline.
(viii) An operating lease is one where a significant part of risk-bearing burden is on the lessee.
(ix) Median is not a measure of dispersion of a random variable.
(x) In linear programming, the shadow price refers to the unused capacity available once the optimum solution is obtained.
(xi) A management decision may be beneficial for a given project center but not for the entire company. From the overall company viewpoint, this decision leads to sub-optimization.

11×1=11

Answer 1. (a)

- (i) C. Net worth Rs. 25,00,000

Debt/Equity 3 : 1

Debt = Rs. 75,00,000

EBIT Rs. 20,00,000

Interest @ 12% Rs. 9,00,000

∴ PBT Rs. 11,00,000

Financial leverage EBIT/PBT = 20,00,000/11,00,000 = 1.82

- (ii) C. $P_0 = \frac{E(1-b)}{K_e - br}$ or $60 = \frac{4(1-0.55)}{0.15 - 0.55 \cdot r}$
or $r = 21.8\%$

- (iii) A Beginning with Rs. 10L, we can purchase dollars in Delhi to get \$ 21,459 (10,00,000/46.6). Using this we purchase £ 13,564 (21,459/1.582) in New York. Now, we sell these pounds in London at Rs. 76.20 per pound to get Rs. 10,33,577 and make a gain of Rs. 33,577.
- (iv) B. $\frac{8\% \text{ on Rs. } 3,00,000}{0.05} = \text{Rs. } 4,80,000$
- (v) C. $\frac{\text{Rs. } (100 - 86)}{\text{Rs. } 86} \times \frac{365}{364} \times 100 = 16.32\%$
- (vi) C. Actual return – CAPM Return
 $= 15.85 - \{5 + 1.15 (14 - 5)\} = 0.50\%$
- (vii) B. A back order is a sale made when the item is not in stock. If back order are possible, stock can be maintained at lower levels. Hence the EOQ model is modified for the cost of back orders.

The new formula is $\left[\frac{2aD}{k \left\{ \frac{b}{(b+k)} \right\}} \right]^{\frac{1}{2}}$

Since the denominator decreases in the modified formula, the EOQ will increase.

Answer 1. (b)

- (i) False
 (ii) False
 (iii) False
 (iv) True
 (v) False
 (vi) True
 (vii) True
 (viii) False
 (ix) True
 (x) False
 (xi) True

PART B (75 Marks)

- Q. 2. (a) What is appreciation and depreciation of currency? Explain with suitable examples. 5
- (b) C. Ltd.'s current operating income is Rs. 4 lakh. The firm has Rs. 10 lakh of 10 per cent debt outstanding. Its cost of equity capital is estimated to be 15 per cent.
 Required:
- (i) Determine the current value of the firm, using traditional valuation approach.
 (ii) Calculate the overall capitalization rate as well as both types of leverage ratio :
 (a) B/S [Debt/Equity ratio]; (b) BV [Debt/Value ratio].
 (iii) The firm is considering increasing its leverage by raising an additional Rs. 5,00,000 debt and using the proceeds to retire that amount of equity. As a result of increased financial risk, k_e is likely to go up to 12 per cent and k_d to 18 per cent. Would you recommend the plan? 10

Answer 2. (a)

A currency is said to have appreciated if one is able to purchase "more" of other currency against it after appreciation. Thus, \$1 = Rs. 45 $\Rightarrow$ changes to \$1 = Rs. 46.

Answer 2. (b)

	Rs.
(i) EBIT	4,00,000
Less : Interest	1,00,000
Earnings for equity holders (N1)	3,00,000
Equity-capitalisation rate (k_e)	0.15
Market value of equity (S)	20,00,000
Market value of debt (B)	10,00,000
Total value of firm (S + B)	30,00,000
(ii) Overall capitalisation rate = $\text{EBIT}/V = \frac{4,00,000}{30,00,000} =$	0.1333
(a) Debt/Equity ratio (B/S)	0.5
(b) Debt/Value ratio (B/V)	0.33
(iii) EBIT	4,00,000
Less : Interest	1,80,000
Earnings for equityholders (N1)	2,20,000
Equity-capitalisation rate (k_e)	0.18
Market value of equity (S)	12,22,222
Market value of debt (B)	15,00,000
Total market value of firm (S + B) = V	27,22,222

The plan is not recommended as the value of the firm would decrease from Rs. 30,00,000 to Rs. 27,22,222.

Q. 3. (a) Sarvesh Ltd. is planning to start a major restructuring plan. If the restructuring plan is undertaken, it will reduce the EPS of the company to Rs. 6-50, but will enhance the payout rate to 75%. The restructuring plan will enable the company to pay dividend that is expected to grow at the rate of 22% for the next 4 years and decline to 11% and remain at that level forever.

The risk free rate of return is 5% per annum and the market return is expected to be 12% with a standard deviation of 12.5%. The covariance of Sarvesh's stock with that of market is 175%.

You are required to calculate the price of the stock, if the restructuring is undertaken by the company.

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(b) State the means to enhance Economic Value Added (EVA) of a company.

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Answer 3. (a)

EPS = 6.5 Payment rate = 75%

DPS = $0.75 \times 6.5 = 4.875$

$$\text{Beta} = \frac{\text{Cov}_{im}}{\sigma_m^2} = \frac{175}{(12.5)^2} = 1.12$$

Reqd rate of return = $5 + 1.12 (12 - 5) = 12.84\%$

Value of stock can be calculated using H Model

$$\begin{aligned} V_0 &= D_0 \left[\frac{(1+g_n) + H(g_a - g_n)}{k_e - g_n} \right] \\ &= 4.875 \left[\frac{1 + 0.11 + 4(0.22 - 0.11)}{0.1284 - 0.11} \right] \\ &= \text{Rs. } 410.67 \end{aligned}$$

Answer 3. (b)

Means of enhancing EVA

There are many individual actions that could create value. However, all those actions may be divided into four, viz.

- 1. Status quo :** The company can maintain the status quo without any big change in strategy but trying to get more return on the existing capital. It could possibly increase price or margin, have more volume or lower the operating costs.
- 2. Growth with profit :** The company can invest in new avenues which offer return more than the marginal cost of capital. The increased investment may be to increase the existing market share, introduce new products, etc.
- 3. Overhaul :** The company can go for overhauling the operations and merge units, sell-off some and reduce the investments in some that do not generate adequate return. It can withdraw from non-profitable areas.
- 4. Minimizing the financing cost :** The company can endeavour to reduce the cost of capital by prudent use of debt, risk management and taking the advantage of financial innovations.

Q. 4. (a) Wonder Limited's balance sheets as at March 31, year 1, year 2, year 3 are given below (Rs. in lakh) :

	As at March 31		
	Year 1	Year 2	Year 3
Liabilities			
Paid-up equity capital	194	194	194
Long-term borrowings:			
From banks	68	97	124
From others	281	343	379
Current liabilities	52	54	99
	<u>595</u>	<u>688</u>	<u>796</u>
Assets			
Gross block	355	356	361
Less : Depreciation	69	95	122
Net block	<u>286</u>	<u>261</u>	<u>239</u>
Current assets	143	199	234
Profit and Loss Account	166	228	323
	<u>595</u>	<u>688</u>	<u>796</u>

Required :

- Prepare a statement of net sources and uses of funds for the year ended March 31, Year 2 and the Year ended March 31, Year 3.
 - Give your comment on the finding in (i).
- (b)** How does 'Risk Adjusted Discount Rate' differ from 'Certainty Equivalents Approach' as techniques of risk analysis in capital budgeting?

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Answer 4. (a)

Wonder Limited
Statement of Sources and Uses of funds for years 2 and 3

	(Rs. Lac)	
	Year 2	Year 3
Sources of funds :		
Issue of long-term liabilities		
Borrowing from banks	29	27
Borrowing from others	62	36
Total Sources	<u>91</u>	<u>63</u>

Uses of funds :		
Funds lost in operations	36	68
Purchase of non-current assets : Fixed assets	1	5
Total uses	37	73
Increase (decrease) in working capital	54	(10)
W-1		
Increase in losses	(62)	(95)
Add depreciation charged	26	27
Funds lost in business operations	(36)	(68)

Comment :

The firm is suffering from heavy cash losses (apart from sizeable loss as per profit & loss A/c) in both years. In fact, its net worth is negative.

The firm has resorted to borrowings to finance its operations. Borrowings have not been used to finance expansion. Given these facts, the firm is likely to go into liquidation in near future as the firm does not seem to have the capacity to service/repay its long-term borrowings.

Answer 4. (b)

Both the RADR and the CE approaches attempt to incorporate project risk. However, the ways of approach differ. The RADR is concerned with the denominator — it increases the discount rate of the NPV formula. The CE deflates the cashflows and deals with the numerator of the NPV formula.

For RADR the discount rate is a constant one over the life of the project, for CE different degrees of risk are taken care of for different years of the project life. The RADR tends to club together the risk free rate, the risk involved and the risk premium, while the CE approach maintains a distinction between the risk free rate and the risk. In CE the discount rate is risk free as the risk is adjusted by reducing the numerator — the cash flow.

Q. 5. (a) The following particulars are available about two firms :

	Firm A	Firm B
Market price per share	Rs. 75	Rs. 30
Number of shares	10,00,000	5,00,000
Market value of the firm	Rs. 7,50,00,000	Rs. 1,50,00,000

Firm A is planning to acquire Firm B. The merger is expected to bring gains, which have present value of Rs. 1.5 crore. Firm A offers 2,50,000 shares in exchange for 5 lakh shares to the shareholders of Firm B.

Based on the above information, you are required to determine :

- total value of Firm AB (Present value AB) after merger;
- gains to the shareholders of Firm A; and
- true cost of acquiring Firm B and net present value of the merger to Firm B.

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(b) 'Business is about taking risk and earning return. Higher the risk in a project higher would have to be the adjustment in cut off rate and vice versa.'

You are the Chief Financial Manager of Road Transport Limited. The company has a fleet of 100 long-haul vehicles, transporting goods across India. The company's cost of capital is 9%. The Board of Directors are considering the following four options :

- Replacement, with minor upgradation, of 50% of existing fleet.
- Adding 50 vehicles to existing fleet.
- Outright purchase of another company engaged in body-building, repairs and maintenance of various models of trucks.
- Investment for controlling a company engaged in movie-production.

Required :

Present a Note to the Board on the discount rate to be used for each of these independent projects. State your assumptions.

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Answer 5. (a)

- $PV_{AB} = PV_A + PV_B + \text{Present value of gain from merger}$
 $= \text{Rs. 7.5 crore} + \text{Rs. 1.5 crore} + 1.5 \text{ crore} = \text{Rs. 10.5 crore.}$
- No. of shares after merger = 10 lacs (A) + 2.5 lacs (issued for shareholder of B) = 12.5 lacs. The amount of Rs. 10.5 cr is apportioned between A and B as 8.4 cr and 2.1 cr in proportion of 4 : 1. The gain to firm A = Rs. 8.4 cr – Rs. 7.5 cr = Rs. 0.9 cr.
- Cost of acquiring Firm B is equal to the gain shared by Firm B = $\text{Rs. } 10.5 \times \frac{1}{5} = \text{Rs. 2.1 crore}$
 NPV of the merger to Firm B = Rs. 2.1 crore – 1.5 crore (market value of B)
 $= \text{Rs. 0.6 crore.}$

Answer 5. (b)

Each of the four proposals under consideration differ in their risk category as under :

- Replacement** : Bears the normal risk attached to the existing line of business. It is evaluated using the cost of capital at 9% (Grade 1)
- Addition** : Carries a marginally higher risk in the context of other imponderables such as demand. Competition, economies of operation, etc. $\Rightarrow$ Cost of capital $9\% + 2\% = 11\%$ (Grade 2)
- Acquisition of a company in a related** line of activity but effectively means moving away from existing line. So, it is evaluated as $9\% + 6\%$ (additional) = 15% (Grade 3)
- Movie production — totally different activity**, though possibly highly profitable and bears highest degree of risk. 25% rate is suggested. (Grade 4)
 The cut-off rates are subjective, but one thing is clear. There is a gradual increase in risk level, as between project (i) and (iv).

Q. 6. (a) Bahadur Ltd. have been engaged in the business of importing commodities and selling the items locally to a net work of retail dealers. Of late, Bahadur's business has increased and credit collection is posing a problem. Current monthly billing is Rs. 2,00,00,000. Average credit period extended to buyers is 2 months. Bahadur is considering whether it could put in place a full factoring arrangement for collection of debts without recourse, on the following terms:

- A service charge computed at 1.5% of total annual sales.
- Factor will advance a sum equivalent to 80% of debts outstanding, for an interest charge of 14% p.a.
- It is estimated that there would be savings of at least Rs. 25,00,000 in administration costs plus Rs. 60,000 as debt collection costs per annum if factor services are availed.
- At present the company is able to raise fresh borrowings at 12% p.a. from the bank.

Required:

Would you recommend bank borrowings?

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(b) Enumerate, in general terms five main functions of a factor in the matter of trade debts. 5

Answer 6. (a)

	Rs.	Rs.
1. Annual Sales	24,00,00,000	
2. Annual net cost of factoring:		
a. Fee at 1.5% of annual sales		36,00,000
b. Interest costs on tie-up of funds $24,00,000 \times 0.8 \times 0.14 \times 2/12$		44,80,000
c. Saving in administration costs & debt collection costs		(-) 25,60,000
Net Cost		55,20,000
3. Borrowing costs from bank $24,00,00,000 \times 0.8 \times 0.12 \times 2/12$		38,40,000

Borrowing from Bank will be Rs. 55,20,000 – Rs. 38,40,000 = Rs. 16,80,000 less than Factoring. So bank borrowing is recommended.

Answer 6. (b)

Functions of Factor :

Depending on the type/form of factoring, the main functions of a factor, in general terms, can be classified into five categories.

- Financing facility/trade debtors
- Maintenance/administration of sales ledger
- Collection facility of accounts receivable
- Assumption of credit risk/credit control and credit restriction, and
- Provision of advisory services

Note : These functions need to be briefly elaborated by the examinees.

Q. 7. (a) Hindusthan Glasswares have a sum of D. Kr. 69,000 due from Danish buyer, three months from now (December 1, 2010). Spot rate Re D. Kr. 8:00 - 8:20. The company concluded a forward contract with ICICI Mumbai when swap points for February Kroners were quoted by it at 20 — 50.

Required :

- (i) Show the rate concluded under Forward Contract;
- (ii) Present your views, if on maturity date of contract Spot Kroners were traded at 7.90-8:10. 7

(b) The ITC stock is selling at Rs. 4,000. Mr. X has a negative view about the stock. He decides to go through the option route to take advantage of the situation. He buys an option from Mr. A which will entitle him to sell 100 shares on or before 30th December at Rs. 3,500 per share for which he has to pay Rs. 200 per share today.

You are required to identify :

- (i) Type of option
- (ii) Exercise price
- (iii) Expiry date
- (iv) Option premium
- (v) Buyer of the option
- (vi) Writer of the option
- (vii) Underlying asset
- (viii) Current market price

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Answer 7. (a)

(i) Swap point sare in ascending order. Hence, add swap points to arrive at forward rate. So, forward rate is 8.20 – 8.70 rupees per D. Kr. Hindusthan Glasswares have to receive D. Kr. They will sell D. Kr. Hence relevant rate is foward bid of 8.20 i.e., Rs. 5,65,800.

(ii) Relevant rate on maturity of forward contract is (spot bid) 7.90. If forward cover had not been taken, the firm has to sell D. Kr. in the market in February 2011 at the spot bid rate of 7.90, and would have been loser by Re. 0.30 per D. Kr. Receipts in rupees would have been Rs. 5,45,100, implying a loss of Rs. 20,700.

Hence, protection under forward contract has been advantageous to Hindusthan Glasswares.

Answer 7. (b)

ITC Stock : Option terms

- (i) American Put Option
- (ii) Rs. 3,500 per share
- (iii) 30th December
- (iv) Rs. 20,000 (at Rs. 200 per share for 100 shares)
- (v) Mr. X
- (vi) Mr. A
- (vii) ITC shares
- (viii) Current market price : Rs. 4,000.

Q. 8. (a) Suppose affiliate A sells 10,000 chips monthly to affiliate B at a unit price of \$ 15. Affiliate A's tax rate is 45%, and affiliate B's tax rate is 55%. In addition, affiliate B must pay an ad valorem tariff of 12% on its imports. If the transfer price on chips can be set anywhere between \$ 11 and \$ 18, how much can the total monthly cash flow of A and B be increased by switching to the optimal transfer price?

(b) Suppose that covered after-tax lending and borrowing rates for three units of Eastman Kodak located in the United States, France and Germany are:

	Lending %	Borrowings %
United States	3.1	3.9
France	3.0	4.2
Germany	3.2	4.4

Currently, the French and the German units owe \$ 3 million and \$ 2 million, respectively to their U.S. parent. The German unit also has \$1 million in payables outstanding to its French affiliate. The timing of these payments can be changed by up to 90 days in either direction. Assume that Kodak U.S. is borrowing funds while both the French and the German subsidiaries have excess cash available.

- What is Kodak's optimal leading and lagging strategy?
- What is the net profit impact of these adjustments?

Answer 8. (a)

For each \$1 increase in income shifted from B to A, A's taxes rise by \$0.45. At the same time, B must pay an extra \$0.12 in tariffs. The before tax increase of \$1.12 in B's cost gives it a tax write-off worth $\$1.12 \times 0.55 = \0.616 . By shifting \$1 in income from B to A, the effect is to lower B's tax payments by \$0.616 and raise its tariffs by \$0.12, a net decrease in tax plus tariff payments of \$0.496. The net effect of switching \$1 in income from B to A is to lower tax plus tariff payments to the world by $\$0.496 - 0.45 = \0.046 . Thus the transfer price should be set as high as possible in order to shift as much income to A from B as possible, or \$18.

The resulting increase in monthly cash flow is $\$0.046 \times 3 \times 10,000 = \$ 1,380$.

Answer 8. (b)

- Both subsidiaries should speed up their payments to the parent while the German unit should lag its payments to the French firm.
- The net effect of these adjustments is that Kodak U.S. reduces its borrowing by \$ 50,00,000, the German unit has \$ 20,00,000 less in cash, and the French affiliate winds up with a decrease in its cash balances of \$ 30,00,000, all for 90 days. U.S. interest expense is raised by \$ 48,750 while German and French interest income are reduced by \$ 16,000 and \$ 22,500, respectively, for a net savings of \$ 10,250.