Institute of Actuaries of India

Subject CT2 – Finance & Financial Reporting

May 2008 Examination

INDICATIVE SOLUTION

Introduction

The indicative solution has been written by the Examiners with the aim of helping candidates. The solutions given are only indicative. It is realized that there could be other points as valid answers and examiner have given credit for any alternative approach or interpretation which they consider to be reasonable.

1) C
2) C
3) C
4) A
5) D
6) D
7) D
8) C
9) B
10) D

[20]

11) Corporation tax reduces the profit available to pay the shareholders’ dividend.
Borrowing increases the interest charge, which is deductible as an expense for corporation tax purposes.
Some forms of borrowing are very tax-efficient e.g. lease payments are tax-deductible and provide a more consistent tax benefit than the effects of raising finance to purchase assets outright and claiming capital allowances.
The alternative to borrowing is to raise finance from the shareholders. If the company makes a rights issue it may be difficult for the shareholders to obtain tax relief on any funds that they borrow in order to buy shares.
The shareholders might prefer the company to borrow on their behalf because the tax benefit is much less likely to be lost.

[5]

12)

a) The main stakeholders in an organization are:

- Workers
- Managers
- Shareholders
- Lenders
- Customers
- Suppliers
- Pensioners
- Community, eg residents
- Government

Managers are sometimes reluctant to pursue risky but very profitable policies because the rewards of success are less than the penalties of failure. Sometimes therefore, managers aim for a quiet life and a satisfactory level of profit.

Policies designed to increase shareholder wealth might not find favor with other stakeholders in the business. For example:

- Workers might be concerned that jobs might be lost or that working conditions and practices might deteriorate

- Suppliers might be concerned that valuable contracts might be lost

- Consumers might be concerned that cost-cutting might result in quality-cutting, that they are being misled by aggressive marketing campaigns and that the company's concern with profit might result in higher prices

- The local community and government might be concerned about the effect of the company's policies on the environment, eg traffic noise and congestion, various forms of pollution, additional building requirements

- Debt holders might be concerned if the company takes more risks in its investments.

b). The aim of the financial manager is to increase the marker value of each shareholder's stake in the firm.
This means the financial manager aims to increase the company's share price by undertaking profitable and appropriately financed investment opportunities.

c) . The capital market provides information on rates of return required from different types of financial assets such as shares or bonds.
This information can be used by the financial manager in assessing the sources of finance and to calculate the weighted average cost of capital that can be used as the discount rate in evaluating the investment projects.
By studying the capital market, the financial manager will be able to monitor the market's reaction to various policies. For example, if shareholders think a company's proposed investment is likely to increase the shareholder wealth, the share price will tend to rise.
Managers can also monitor the policies and performance of particular companies which will help them identify merger and take-over threats or opportunities that can be exploited.

[10]

13) a) If a company successfully obtains a quotation on a stock exchange, the price of its securities will be included on the exchange's official list. Such quoted securities are called listed securities.

Methods of obtaining a quotation: -

- Offer for sale at a fixed price
- Offer for sale by tender
- Offer for sale by subscription
- Placing

- Introduction

b) (i) The company would buy a put option on interest rate futures.

(ii) This would give it the right to sell interest rate future at a fixed price at a fixed date in the future.
If interest rates rise, then the price of the interest rate future would fall, so the company would exercise its option to sell, thus making a gain on the future to offset the higher interest rates it has to pay on its loan.
On the other hand, if interest rates fall (and the price of the future rises) the company will not exercise its right to sell, and will just benefit from the fall in interest rates on its loan.

c) (i) The option holders have the right to buy shares at the striking price. They will almost certainly exercise those rights if the market price exceeds the striking price.
Buying shares at a discount to the market price will spread future profits over more shares.
The corresponding investment made by the option holders will probably be insufficient to compensate for the broader shareholding, hence the value of existing shares will be "diluted".
Effectively, this means that Neeta's investment might fall in value at some future date because of options.

c) (ii) The current market price of the shares will reflect the fact that these options are outstanding.
That means that Neeta will not actually subsidise or pay for the effect of these options.

If the options expire unexercised then Neeta will benefit from this "discount" and will not bear any cost.
On the other hand, if the share price rises then the potential upside will be limited to some extent by the effect of the options.
That might affect the overall risk profile of the options.

[10]

14)
Cost of Debt (rd) = (0.08)(1 - 0.4) = 0.048 or 4.8%
Cost of Equity (re) = [($2.00 x 1.06)/($32(1 - 0.1)) + 0.06]
= 0.1336 or 13.36%

Proportion of Debt (Wd) = 0.25
Proportion of Equity (We) = 0.75
WACC $= W_d(r_d)(1 - T) + w_{ce}(r_e)$

$= 0.25(0.0480) + 0.75(0.1336)$
$= 0.1122 = 11.22\%$.

i) The expected gain is higher from the branch for the feasibility study because the probability tree makes it clear that the project should be abandoned if the feasibility study suggests failure.

This suggests that the additional information about the risks associated with proceeding outweigh the cost of the study. If the company would carry on with the investment even if the feasibility study indicated otherwise then it would be better not to conduct it because that would be a waste of money, unless the study was likely to yield information that would somehow enhance the probability of the project's success.

ii) Probability trees are useful for resolving projects which involve sequential decisions where the outcome can be changed once the project is under way. This enables the decision maker to allow for different contingencies at the planning stage. For example, in this example the company must decide whether or not to conduct a feasibility study.

Once the study has been undertaken the company must decide whether to proceed with the expansion. Probability trees are best suited to circumstances where probabilities can be estimated for different eventualities. This means that the method is best suited to relatively simple chains of decisions.

iii) A simulation exercise can be much richer than a probability tree. It is possible to incorporate far more variables into a simulation than to a probability tree.

It may also be possible to deal with distributions that might not be open to an analytical solution. The simulation could allow for far more complex probability distribution functions.

It would also be possible to have more realistic ranges of outcomes than the present "success" or "failure" dichotomy.

A simulation will also provide an insight into the range of possible outcome from different choices.

The results can be presented as a distribution of outcomes from each major choice open to the directors.

iv) The project must be capable of being modeled. For example, it would have to be possible to model the likelihood of the company recruiting suitable local employees.

The effects of each possibility will also have to be built into the model so that, for example, the effects of the jobs market variables are consistent with the salary variables. This might involve assuming that managers behave rationally, but in practice human decision makers might not take the most appropriate decisions when faced with, say, a run of bad luck

v) All of the decision tools for appraising capital projects require highly subjective decisions and estimates from the decision makers.

The results of the appraisal exercise can be predetermined by biasing assumptions.

Furthermore, some decision aids have an inbuilt bias of their own (e.g. payback favors early cash flows). This means that the choice of decision model can be just as important as the decisions.

It may not be a bad thing that these factors exist. Arguably an instinctive assessment of a project's viability can be as valid as a slightly distorted impression from a supposedly objective model.

[20]

15) a) (i) Income Cover =

$$\frac{\text{Profit on ordinary activities before interest and taxation}\ldots\ldots\ldots\ldots}{\text{Annual interest payments due on that issue of loan stock + all prior loan stock}}$$

Limitations: -

- It does not consider volatility of profits
- Does not consider length of time for which loan is outstanding

(ii) Asset Cover =

$$\frac{\text{total assets – current liabilities – intangible assets}}{\text{loan capital + (all prior charges)}}$$

Limitations: -

- Assets might not reflect their realizable market value if the company is wound up.

b) Return on capital employed is normally regarded as the most reliable measure of profitability.
Given a certain level of investment, it is always better for the business to generate the highest possible return on that capital.
Other ratios might give an insight into profitability, but they can be difficult to interpret in isolation.
Higher gross profit in Y LTD does not necessarily mean that the company is better managed because it could be overpricing its sales in order to achieve that result.
Similarly higher net profit suggest that Y LTD is spending less on non trading operating expenses.
But it could be possible that S LTD might be making a conscious investment in better administrative systems and in promotion & advertising & that might be a further explanation for the higher returns that it is enjoying.

[5]

16) a) Equity investors –

- Investment decisions require information about profits and cashflows.
- Annual reports provides an opportunity to "fine tune" the forecasts of company performance
- Shareholders also require information about the transactions authorized by the directors for stewardship purpose.

Loan creditors –

- Lending decision involves measurement of risk of default, and a lender wants to know whether a business can generate sufficient cash to repay any loan
- Lender will also wish to ensure that the business has an adequate asset base to meet its obligations in the event of failure.

Employees –

- Interested in enterprise's ability to pay salaries and also to offer job security.

Business contracts –

- They are interested in continuity of sales to customers
- Continuity of materials and services from the suppliers
- They may want some insight into the company's pricing and trading policies.

b)

Non Current Assets		7,25,000	
Current Assets		2,90,000	10,15,000
Share Capital		2,25,000	
Reserves			
• Share premium	75,000		
• Retained earnings	1,95,000		
• Revaluation reserve	3,95,000	6,65,000	
Loan capital		1,25,000	10,15,000

[6]

17)

In order to reduce the volatility of profits, the management could do any of the following:

- Reduce the gearing of the company by issuing more equity shares.
- Negotiate contracts with suppliers which involve the suppliers taking some of the risks, and consequently some of the volatility of profits.
- Take out insurance against certain risks.

- Organize export guarantees to protect against the default of trading partners in foreign countries.

- Use currency hedging techniques to reduce the effect of currency volatility on translated profits. This could involve options on currencies, or selling an appropriate amount of the foreign currency forward to hedge the value of the profits in the domestic currency.

- Organize its debt so that payments of interest and repayments of capital are in the same currencies as its earnings.

[4]

18) a) Holding company:-

- If a company has more than 50% voting rights in another company then it will be its holding company and that other company will be known as its subsidiary.
- Similarly if a company can appoint or remove more than 50% of the board of directors of another company then it will be the holding company of that other company which will be known its subsidiary.

Associate company: -

- It is one which is not a subsidiary, but which is subject to significant influence (but not control) by the holding company.
- There is normally a presumption that significant influence would arise if the holding company owned more than 20% of the associate's voting rights.

b) (i)

- Balance sheet equation is Assets = Liabilities + Capital.
- The accounting system keeps track of the various components of assets, liabilities and capital so that this relationship is maintained.
- The dual aspect concept suggests that every transaction will affect two balances.
- Every entry in the books has a corresponding entry, which has the effect of maintaining the balance between assets, liabilities and capital.
- The balance sheet is part of the output of the double entry bookkeeping system.
- This records adjustments and transactions in such a way that any resulting balance sheet must balance.
- Every entry is recorded in 2 places, to reflect the fact that both sides of the balance sheet equation must hold true.

(ii)

- The going concern assumption effectively permits accountants to prepare financial statements that make no overt attempt to inform certain potential decisions.
- For example, non-current assets are recorded at a carrying value that may bear very little relevant to decisions such as whether the assets should be sold for their market values.

- This is because the going concern assumption takes it for granted that the assets cannot be sold because the business needs the assets in order to carry on.

- The assumption also means that potential errors in short to medium term forecasts and estimates can be tolerated because the figures will resolve over time.
- For example, the inventory is valued on the basis of certain assumptions about its eventual selling price.
- Any error might affect the calculation of profit for the current year, but that will be reflected by a corresponding increase or decrease in the following year and that should not matter year on year.
- In the absence of a going concern assumption, assets would have to be stated at reasonably current values.
- That would both complicate the preparation of the statements and would leave the prepares and auditors more open to challenge in the event that the values proved to be incorrect.

c) Profit & Loss Account for financial yeas 2005-06 of gupta textiles limited

Sales	1,000	
Less: Cost of Sales	555	[412 + 50 –162 + 255]
Less: Office Expenses & wages	155	
Operating Profit	290	
Add: Interest received	20	[250*0.08]
Less: Interest on debentures	42	[350*0.12]
Profit before tax	268	
Less: Tax charge	111	
Profit after tax	157	
Less: Dividends	35	[balancing item]
Retained profits	122	[Reserves 237 –115]

Cashflow statement for financial yeas 2005-06 of gupta textiles limited

Operating Profit	290	
+ Depreciation	50	
+ Decrease in stocks	93	
+ Decrease in debtors	35	
- Decrease in creditors	103	
Net cashflows from operations	365	
+ Interest received	20	
- Interest paid	42	
- Dividend paid	128	[228 + 35 – 135]
- Tax paid	220	[249 + 111 – 140]
- Purchase of fixed assets	50	
+ Proceeds from sale of investments	50	
+ Proceeds from issue of debentures	50	
Increase in cash & bank balance	45	[With Bankers 175 –130]

[20]

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