

Actuarial Society of India

Examinations

November 2005

CT2 – Finance and Financial Reporting

Indicative Solutions

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

[2 marks each]

Q.11)

a)

Risk Matrix

A risk matrix is a table used for the identification and analysis of the risks inherent in a capital project.

[0.5]

It provides a systematic method by which to identify and characterize risks and thereby reduce the chance that any particular risk will be overlooked.

[1]

The main column headings shown relate to the causes of the risk e.g. political, business, economic etc.

[0.5]

The row headings relate to the different risks that arise in the different stages of the project, e.g. creation of asset, operation of asset.

[0.5]

The risk analysis team considers each cell of the table in turn and identifies the relevant risks.

[0.5]

The characteristics of the risks thus identified can then be analyzed

[0.5]

Theses will normally be assessed according to categories such as likelihood of occurrence, degree of dependence, controllability and financial impact on the project.

[0.5]

b)

Systematic risk is the element of the variability of the investment return that can be eliminated neither by investing in the same type of project many times over, nor by investing in a well diversified portfolio of different projects.

[1]

It stems from factors external to the project in question that effect all projects and assets to some degree, e.g. the common business cycle.

[0.5]

Probabilistic risk is the element of the variability of investment return that can be eliminated either by repeated investment in a number of similar project, or failing this, by diversification over a number of different projects.

[1]

It, therefore, stems from factors that are internal and hence specific to the particular project, e.g. cost overruns arising from incorrect forecasts or poor management.

[0.5]

As probabilistic risks can be eliminated through diversification, investors should not be rewarded by any additional expected return for accepting them.

[1]

When appraising a capital project, probabilistic risk should be allowed for by specific risk analysis, and an explicit adjustments to the cash flows concerned, allowing for both the upside and downside risk potential.

[1]

Only if this is not possible, perhaps because it is difficult to assess the impact of a particular probabilistic risk, should adjustment to the risk discount rate used to value the project cash-flows be considered.

[0.5]

In contrast, the risk discount rate should be adjusted appropriately to reflect the estimated degree of systematic risk inherent in the project, i.e. higher systematic risk implies a higher risk discount rate.

[1]

This is because:

- Historical data suggests that investors typically require a higher level of expected returns, in return for investing in assets with a higher level of systematic risk – given that they cannot diversify it away.

[1]

- increasing the discount rate is consistent with the assumption that the risk increases exponentially with time, as one looks further into the future. Whereas this is unlikely to be the case for a probabilistic risk that is specific to a particular project, it is a reasonable assumption as regards systematic risk.

[1]

[Maximum up to 8 marks]

Q.12)

If company H is a holding company and has total ownership of its subsidiary company S, then company H will have shares in S as part of its fixed assets and the shares of company S will all be owned by the holding company.

[1]

When preparing consolidated accounts for the group, internal relationship like these are cancelled out to avoid double counting, and other items of the balance sheet are simply added together.

[2]

If company H paid more than the book value for the shares of S, when consolidated, the difference (goodwill) would be recorded as an intangible asset of the group.

[1]

If company H does not own all of the shares S, then the rest of the shareholding is termed as “minority interest”.

[1]

On consolidation, when the internal relationships are cancelled out, the minority interest must appear separately in the balance sheet, at the end, just before the totals.

[1]

Q.13)

Consolidated balance sheet

We must first calculate the goodwill involved in the transaction. This can be calculated by comparing the value of the shares or cash paid to acquire company Y against the book value of the assets purchased:

Goodwill = Rs. 4 crore- Rs. 3 crore=Rs 1 crore

[1]

We can then construct the following consolidated balance sheet:

	Company X Rs. In cr.
Fixed assets	15
Current assets	5
Current liabilities	(4)
Long term liabilities	(7)
Total	<u>9</u>
Share capital	6
Reserves	3
Total	<u>9</u>

The assets and liabilities of company X and Y have been added.

[1]

After having cancelled out the internal relationship to avoid the double counting of X's investment in Y.

[1]

Notes:

- the Rs. 1 crore goodwill has been added to the fixed assets.

[1]

- the total current assets of X and Y is Rs. 9 cr. However, Rs.4 cr of cash has been paid in respect of the transaction, therefore the remaining current assets would total Rs. 5 cr.

[1]

Q.14)

Depreciation is defined as the measure of the wearing out, consumption or other reduction in the useful economic life of a fixed asset, whether arising from:

[0.5]

- effluxion (passage) of time, or
- obsolescence through technological or market changes.

[0.5]

[0.5]

Depreciation adjustments are required because virtually all fixed assets have finite useful economic lives. There are two reasons for this:

[0.5]

- If a company buys an asset which it still owns at the end of the year, the company has not lost the amount spent. The real loss is the difference between the value of the asset at the start of the year and the value of the asset at the end of the year. [1]
- The amount spent on the fixed assets can vary considerably from year to year. The profit and loss account would not, therefore, give a true picture of a company's underlying long term profitability as the expenditure on fixed assets could distort the profitability from year to year. [1]

Q.15)

There are four items in the share capital and reserves:

- Share capital is the nominal value of the shares issued. [1]
- The share premium account records the additional amount raised from the shares issue in excess of the nominal value. [1]
- The revaluation reserve records an increase in the value of fixed assets if fixed assets are revalued upwards. [1]
- The profit & loss account records the profit retained in the business to date. [1]

Q.16)

Advantages:

The major advantage of a limited company is that its limited liability state makes it much easier for the organization to raise money from investors. Investors may be reluctant to become involved as a part owner of a partnership, since they risk their entire personal wealth. With limited liability, investors are likely to be much more willing to provide capital. [1]

This is particularly important for business ventures involving a risk of incurring substantial debts (such as insurance companies), and businesses which require large amounts of capital. [1]

Limited liability allows large number of people to invest small amounts of money with relatively minimal checking of the company's prospects. Investors can have shareholdings in a wide range of companies thus spreading their risk. [1]

The board of directors can choose to hire professional managers to run the company. The use of specialists increases efficiency.

[1]

The separation of owners and managers allows the ownership to change without affecting management.

[1]

Disadvantages:

The main disadvantage of a limited company is for the creditors of the company following a winding up. Once the company's assets have been exhausted, the trade creditors have no way of ensuring payment.

[1]

Ownership of the business is often divorced from day to day control, which may encourage an inefficient corporate attitude to develop. The managers of a company may have aims that are not in the best interests of the shareholders. This is an example of the agency problem.

[1]

Similarly, limited company allows investors to invest in shares without taking an active interest in the long-term needs of the company, because they may be more interested in short term gains.

[0.5]

Information asymmetries often exists between various classes of stakeholders i.e. the different stakeholders have access to different information. This makes any agency problem more difficult to resolve.

[1]

It also reinforces the need for proper accounting standards to be observed.

[0.5]

[maximum up to 8 marks]

Q.17)

Reasons for seeking a listing:

- to raise capital for the company.
- to make it easier to raise equity finance particularly where the company hopes to expand
- to make it easier to raise short and long term debt finance, because lenders feel safer and happier about lending money to a listing company.
- to give existing shareholders an exit route.

- to enable the company's shares to be more accurately and easily valued by supply and demand in the market.
- to enable the shareholders to use the company's listed shares as backing for their own borrowings and thus increase the attraction of holding the share
- to enable the xyz company to offer listed shares to shareholders in another company which the xyz company wants to take over
- to take advantages of temporarily high share prices
- to increase the status of the company.
- to increase public awareness of the company to increase sales.
- to increase the number of shareholders who own shares in the company to improve marketability of the shares.

[0.5 mark for each to a maximum of 5]

Q.18)

I)

Four shares would have been worth $4 \times 450 = \text{Rs. } 1800$

[0.5]

In theory after the issue, this would leave five shares worth $1800 + (100 + 250) = \text{Rs. } 2150$.

[1]

Thus, the shares would be worth $2150 / 5 = \text{Rs. } 430$ each.

I)

[0.5]

II)

The shareholder can take up his rights, or sell them in the market, or just let them to lapse.

[1]

He must take up his rights to protect his stake in the company, assuming that the rights issue will succeed.

[1]

The larger the discount, more valuable is the right to shareholders.

[1]

The discount actually helps to ensure that the issue proceeds smoothly and without undue expenses.

[1]

The discount is necessary to avoid the company having to pay substantial underwriting fees.

[1]

He may sell the rights for their market value for the issue to have no effect on his wealth/investments.

[1]

If the rights price is close to the market value, even a small fall in the share price could make the rights irrational to exercise.

[1]

[max. 6 marks for this part]

Q.19)

The main limitations can be described under the following sub-headings:

1. Subjectivity
2. Appropriateness
3. Comparison between firms
4. Some limitations of ratio analysis
5. Accuracy of figures

[1]

1. Subjectivity:

Firms use a range of different methods to arrive at the figures to put in their accounts. For example:

[0.5]

Stock valuation: stocks can be valued in a number of ways, e.g. FIFO or LIFO or any other method

[0.5]

Depreciation: firms have a large choice as to the depreciation method used. Any method will at best approximate the true pattern of the reduction in the value of the fixed assets.

[0.5]

Revaluation of assets: some firms revalue their assets when their asset value increase, others do not.

[0.5]

Intangible assets: These are often particularly hard to value. A great deal of subjectivity is involved in putting a value on a brand name, for example, many companies don't even try to value intangible assets.

[0.5]

[Max 2]

2. Appropriateness of the figures used:

The figures presented in the accounts may not be most appropriate for the purpose of a particular user of the accounts.

[0.5]

Going concern: The value of many assets would be much lower on a wind- up basis than on the on- going basis usually assumed.

[0.5]

Present values: The amount shown for debtors and creditors are their face values, not their true present value.

[0.5]

Accuracy: Giving a “true and fair” view does not mean that accounts are absolutely accurate. Many items in the accounts will be estimated.

[0.5]

[Max 2]

3. Difference between firms

Many users of accounts wish to compare different firms:

[0.5]

Comparability: Many of the problems above (e.g. stock valuation, depreciation method) are worrying since different firms use different methods. This makes reliable comparisons between firms very difficult.

[0.5]

Creative accounting: A few firms may deliberately set out to mislead by choosing the accounting policies that will maximize reported profits.

[0.5]

Formats: The choice of accounting formats can mean that different firms can produce sets of accounts which are difficult to compare.

[0.5]

[Max 2]

4. Some limitations of ratio analysis:

Ratio is a very useful technique for the interpretation of financial statements. It does, however, have its limitations. Some of these are outlined below:

[0.5]

Diverts attention: It diverts attention from the figures and statements themselves. It is important to look at aspects such as the sheer size of the company under consideration. It is also important to look at the information in the notes which is not usually reflected in the ratios.

[0.5]

Appropriate comparison?: Comparisons can be affected by different accounting policies or by other external factors. If, for example, two haulage companies use different methods for the calculation of depreciation then any ratio based on their financial statements might not be comparable.

[0.5]

Different industries: There could be peculiarities of the trade which make it difficult to interpret certain ratios. A property company, say might appear to have a low return on capital employed.

[0.5]

[Max 2]

5. Accuracy of the figures:

Due to the difference approach adopted by companies, the figures shown in the account may not always show an accurate picture of the state of affairs.

[0.5]

Out of date: The figures reported will necessarily be out of date by the time they come to be published and read.

[0.5]

Window dressing: Some firms have been known to delay transactions so that they occur just after the year end, or to advance other transactions so that they are included in the year end accounts.

[0.5]

Forecasting: Although they are only meant to serve as a historical record, accounts are widely used as a means of predicting the future. Interpreting accounts for this purpose is full of problems. For example, no indication is given of the firm's plans for the future.

[0.5]

[Max 2]

[Max 2 marks for suitable drafting style and tone]

[Total Maximum 13 marks]

Q.20)**I)**

Analyzing the expected case first.

The cost of the new machine is Rs 10 Crore. The economic life of the new machine is expected to be 10 years, and so the equivalent annual cost of the new machine is:

$$10 \text{ Crore} / 5.650223 = \text{Rs } 1.77 \text{ Cr (approx)} \quad [2]$$

The annual savings in costs:

$$0.5 \text{ Crore} \times (\text{Rs } 8 - \text{Rs } 4) = \text{Rs } 2.00 \text{ Cr} \quad [1]$$

The additional earnings on the salvage value (which has been freed from the physical investment in machine) is

$$0.12 \times (1 \text{ Crore}) = 0.12 \text{ Crore} \quad [1]$$

Thus, the equivalent annual cost savings is:

$$2.00 + 0.12 - 1.77 = \text{Rs } 0.35 \text{ Cr} \quad [1]$$

Sensitivity Analysis:

Sales (Pessimistic): Annual savings in costs would be $0.4 \text{ Cr} \times (\text{Rs } 4) = \text{Rs } 1.6 \text{ Cr}$. Therefore, the equivalent annual cost savings would be reduced to $\text{Rs.} -0.05 \text{ Cr. } (= +1.6 + .12 - 1.77)$ (i.e. loss) [1]

Similarly, Sales (Optimistic) would be $\text{Rs } 1.15 \text{ Cr. } (= 0.7 * 4 - 1.77 + .12)$ [1]

Economic Life (Pessimistic): Expected life of the new machine would be 7 years. So equivalent annual cost of the new machine would be $10/4.564 = \text{Rs } 2.19 \text{ Cr}$. Equivalent annual savings would be $\text{Rs.} -0.07 \text{ Cr } (= 2.00 - 2.19 + .12)$ (i.e. loss) [1]

Similarly, for Economic Life (Optimistic) the equivalent annual savings would be $2.00 + 0.12 - 10/6.424 = \text{Rs.} 0.56 \text{ Crore}$

[1]

Manufacturing Cost (Pessimistic): Equivalent annual savings would be $0.5 \times (8-6) + .12 - 1.77 = \text{Rs Rs.}-0.65 \text{ Cr}$ (i.e. loss)

[1]

Similarly, Manufacturing Cost (Optimistic): $0.5 \times (8-3) + .12 - 1.77 = \text{Rs.}0.85 \text{ Cr.}$

[1]

Summarizing all the above in a table:

[1]

	Equivalent Annual Cost Savings (Crore)		
	Pessimistic	Expected	Optimistic
Sales	-.05	.35	1.15
Manufacturing Cost	-.65	.35	.85
Economic Life	.07	.35	.56

II)

In terms of potential negative outcomes, manufacturing cost is the key variable.

[1]

Goodyear should go ahead with the study, because the cost of the study is considerably less than the possible annual loss if the pessimistic manufacturing cost estimate is realized.

[1.5]

Of course, it may consider the probability of pessimistic scenario happening while taking such a decision.

[0.5]
