

INSTITUTE OF ACTUARIES OF INDIA

CT2 – Finance and Financial Reporting

October 2009 EXAMINATION

INDICATIVE SOLUTION

General guidelines to markers:

The solutions provided here are indicative ones. Please award appropriate marks for any correct alternative solutions.

Please award marks for correct steps as indicated in the indicative solution even if the final answer does not match exactly.

If data input in a solution is wrong, please do not deduct more than 30% of maximum marks allocated to that part of the question.

1. C [2]
2. A [2]
3. B [2]
4. D [2]
5. A [2]
6. D [2]
7. B [2]
8. B [2]
9. C [2]
10. A [2]

11. a) i) Benchmark – A standard or model portfolio against which a fund’s structure and performance will be assessed.

ii) Index linked gilt – A bond for which the interest payments and the final redemption proceeds are linked to movements in the RPI/ Index/ Inflation

iii) Arbitrage – The simultaneous buying and selling of two economically equivalent but differently priced portfolios so as to make a risk – free profit

iv) Long position – A long position in an asset means having an economic exposure to the asset/or bought an asset or buying an asset.

b) Agency cost incurred by the shareholders is defined as the sum of three different components costs, namely:

- Those incurred in monitoring the managers
- Those incurred in seeking to influence the actions of managers
- Those incurred because the managers do not act in the owners best interest.

c) Hire Purchase and Credit Sale

- Hire Purchase –
 - Advantage to buyer – Does not have to pay cash upfront.
 - Disadvantage to buyer – The seller can retain ownership of the goods until the end of the term of the agreement and can reclaim them if buyer does not keep up the repayments.
Buyer has to pay interest on top of the price of the goods.
- Credit Sale –
 - Advantage to buyer – Legal ownership passes to the buyer at the start of the agreement.
If the buyer defaults on the repayments, the seller cannot reclaim goods from buyer, the seller has to sue the buyer through courts.
 - Disadvantage to buyer – Buyer has to pay interest on top of the price of the goods.

[8]

12. a) Accounting profit, very briefly is calculated as follows: -

	Sales Revenue
Less	<u>Expenses</u>
	Operating profit
Plus	<u>Non – trading Income (Interest, dividends, capital gains)</u>
	Profit before tax and interest
Less	<u>Interest paid</u>
	Profit before tax

b) The main adjustments to accounting profits in order to arrive at taxable profits are: -

Add back any business expenses or potential expenditure shown in the accounts which are not allowable for tax (eg entertainment of customers, fines for illegal activities)

Add back any charge for depreciation, and instead subtract the “allowable capital allowance”

Deduct any special relief’s, eg research and development costs may be able to be deducted immediately.

c) Following will be included in CGT: -

I. Because the house was not Mr. Hitesh’s main residence.

Following will not be included in CGT: -

II. Because CGT does not apply to private motor cars.

III. Because it is a transaction between a husband and wife.

[6]

13.

(a)

Rights Issue

A rights issue is where a company offers further shares, at a given price, to existing shareholders in proportion to their existing holdings.

The price will be at a discount to the current share price.

The main effects of a successful rights issue are:

- New shares are created
- New money is raised for the company
- The total value of the whole company should be increased by the extra money raised
- The price per share will fall depending on the extent of the discount and the number of new shares issued.

Suitability

- Equity finance is less risky for the company than debt finance.
- Dividends are paid at the discretion of the directors. There is greater opportunity to plough back profits into the business. This is also helpful for the short term cash flow issues.
- The shares should be attractive to the shareholders since the business has good prospects for the future. They should be able to be sold at only a slight discount to the current share price.
- The share price will fall. How far it falls depends on the extent of the discount, the number of new shares issued, and the market view of the rights issue.
- The company will consider the cost of the issue, including underwriting costs (if they choose to have the issue underwritten).
- There may be adverse shareholder reaction to the issue. Some shareholders may not be able to afford to buy new shares at the time of the issue and will be disappointed to see their control of the company diluted.

Convertible Unsecured Loan Stock

Convertible unsecured loan stocks are unsecured loan stocks which give the right to convert into ordinary shares of the company at a later date.

The characteristics of a convertible security in the period prior to conversion are a cross between those of fixed-interest stock and ordinary shares. As the likely date of conversion (or not) gets nearer, it becomes clearer whether the convertible will stay as loan stock or become ordinary shares. As this happens, its behavior becomes closer to that of the security into which it will convert.

The convertible loan stock will have a stated annual interest payment (paid in twice-yearly installments).

Suitability

- Convertible securities offer the opportunity to combine the lower risk of a debt security with the potential for large gains of equity. The price paid for this is a lower running yield than on a normal loan stock or preference share.
- There will generally be less volatility in the price of the convertible than in the share price of the underlying equity; convertibles generally provide higher income than ordinary shares. This should be more attractive to the investors.
- If the cash flows improve as mentioned, then there would be sufficient funds to pay for the coupons.

Eurobonds

A Eurobond is a bond issued in the Euro market. A Eurobond is marketed internationally, mainly by the London branches of international banks.

Eurobond issues can be made in almost any currency including the euro.

Most Eurobonds are redeemed at par on a set date with fixed coupon payments during the term of the Eurobond. However, coupon payments on Eurobonds are usually made annually rather than six-monthly.

A significant minority of Eurobonds have a variable coupon payment. They are known as “floating-rate notes”.

Almost all Eurobonds are unsecured.

Eurobonds are “bearer form” documents.

Most trading in them occurs through the banks rather than through a stock exchange. Eurobonds are also used to raise large sums.

Suitability

- Eurobond issues do not come under the tax or legal jurisdiction of any country. This lack of regulation keeps the cost of borrowing down.
- The cost of borrowing may be lower than equivalent borrowing in the local country.
- Eurobonds may be denominated in almost any currency. This would suit KiteAir, which may need to pay for the carriers in other currencies.
- Eurobonds can help raise large sums of money which will help KiteAir to manage the financing through one issue.
- Issues are arranged by a syndicate of investment banks. KiteAir will have to negotiate the arrangements for the issue and the fee to be paid to the arranging banks.

(b)

Further Factors that KiteAir should consider

Before making its decision, KiteAir should consider the following:

➤ The cost of raising the finance

The company should consider the initial issue cost, plus the return that will have to be paid to the investors.

➤ The tax position

Interest on debt finance is tax deductible, whereas dividend payments are not.

➤ The risk to the company

Interest on debt has to be paid, whereas dividends are paid at the discretion of the directors. If KiteAir were to hit a further bad patch, eg pilot unrest or decrease in passenger traffic or political uncertainty in a country that it deals with, high interest payments could be very difficult to pay.

➤ The effect on control

Debt holders have no vote, but shareholders do. KiteAir probably has many small shareholders at present so this is not likely to be of great concern to them.

➤ Flexibility of finance

Share capital is usually irredeemable (though share buybacks are possible) whereas debt is redeemable and can be issued at various terms.

➤ *Assets held*

If the company has few tangible assets, it is difficult to raise debt finance. This is not likely to be a problem for KiteAir since it is a company with a substantial and increasing amount of carrier assets.

[10]

14.

Expected price of shares after issue

$$= [(5 \times 4) + (4 \times 1)] / [4 + 1]$$

$$= \$ 4.80$$

His holding of shares will be worth \$ 24,000,000.

His proportion of the company (previously 1%) will fall to:

$1\% \times (\text{number of shares in issue before rights}) / (\text{number of shares in issue after rights}) = 4/5$
 % OR 0.80 % of the company.

[5]

15. a) The main definition of Asset Cover is

$$= \frac{\text{Total Assets} - \text{current liabilities} - \text{intangible assets}}{\text{loan capital} + (\text{all prior charges})}$$
 (this is not part of solution)

The common variations to this definition is as follows: -

i)
$$= \frac{\text{Total Assets} - \text{current liabilities} - \text{intangibles}}{\text{Balance sheet amount of loan capital}}$$

ii) Not deducting current liabilities (i.e. using “Total Assets” or “Total equity + Liabilities”)

iii) Using the average capital figures from the start and end year balance sheets.

iv) Using the market value of the company’s capital (share and loan capital) as the denominator

v) Deducing intangibles form the denominator.

b) I. Subjectivity –

Inventories can be valued in a number of way’s

Long – term contracts can be dealt with in different ways

There is a wide choice of methods of calculating depreciation

Some firms revalue their non – current assets periodically, others do not

Intangible assets may or may not be shown in a company’s accounts, their true value is difficult to determine.

II. Appropriateness of figures –

Should assets be valued on a going – concern or a wind up basis?

Should assets be shown at historical cost or at their long – term economic value to the company?

Some items in the accounts will be estimated

The balance sheet shows end – year values, but average values may be more appropriate for some purposes.

III. Comparisons between firms –

It is difficult to compare similar items between firms when they have used different calculation methods.

Creative accounting may be a problem with some firms.

The choice of accounting formats may make it difficult to compare the accounts of different companies.

Different companies will show different levels of details.

IV. Accuracy of figures –

The figures in the accounts will be out of date by the time they are published.

Firms can delay or advance transactions to manipulate the accounts for a particular year.

Accounts are often used for forecasting even though they are meant purely as a historical record.

[5]

16.

(a)

(i) Business Entity Concept

The affairs of the business are kept separate from those of the owners. This is perfectly valid in the case of a limited company, which has its own legal identity. It would, however, also apply to sole traders and partnerships where the business does not exist except as part of the owners' estate.

(ii) Realisation Concept

Income is recognised as and when it is “earned”. It is not, therefore, necessary to wait until the customer settles his or her bill. This avoids the fluctuations in reported income which might arise if everything was accounted for on a cash basis. It can also create the impression that the business is performing well when, in fact, it is in danger of running out of cash. A business which is expanding might report income long before the related cash inflows.

(iii) Accruals Concept

Expenses are recognised as and when they are incurred, regardless of whether or not the amount has been paid. Again, this avoids the random allocation of costs to periods depending on whether the bill happens to have been paid or not.

(b)

Points need to be considered in bringing the concepts together

Taken individually, each of the concepts would appear to be little more than common sense. Most are designed to make the statements easier to prepare (eg the money measurement concept) while other are designed to make the statements more useful (eg accruals produces more meaningful profit figures).

When taken together, however, the concepts often conflict with one another and this makes their application confusing for accountants and readers of financial statements alike.

The most obvious conflicts are between the concept of prudence and the going concern and realisation concepts.

It seems incongruous to attempt to present a prudent view while assuming that the business has an almost unlimited useful life. Similarly, it is hardly prudent to assume that a transaction will result in a positive outcome without first waiting to ensure that the income will actually be received.

The Financial Reporting Standard (FRS 18 in UK) states that the accounting policies selected must be those “judged to be most appropriate ... for the purpose of giving a true and fair view (of the financial position and profit and loss for a period)”.

Furthermore, it identifies two concepts – the going concern assumptions and accruals – as playing a pervasive role in financial statements.

Hence, the FRS requires that:

1. Financial statements should be prepared on a going concern basis unless:
 - (a) the entity is being liquidated or has ceased trading, or
 - (b) the directors have no realistic alternative but to liquidate the entity or to cease trading.
2. Financial statements, except for cashflow information, should be prepared on the accruals basis of accounting.

FRS 18 also requires that the objectives against which the appropriateness of accounting policies should be judged are:

- Relevance
- Reliability
- Comparability and

➤ Understandability.

Reliability encompasses the need for a careful balance to be struck between “neutrality” (ie freedom from deliberate bias) and prudence in the face of uncertainty.

[6]

17.

(a)

Choice of Risk Discount Rate

The discount rate is the current cost of raising incremental capital in order to fund the project. This is the rate of return which needs to be earned on the capital if the existing shareholders are to be no better or worse off.

This should be the company’s cost of raising capital, taking this as a weighted average where the weights are based on the optimum capital structure for the company as between equity and debt.

The cost of equity capital is the current expected total return on index linked bonds plus a suitable equity risk premium.

The cost of debt capital is the current expected total return on index linked bonds plus a suitable bond risk premium, having regard to the company’s credit rating, and then multiplied by $(1 - t)$ where t is the rate of tax.

As this is the company’s first international venture, the discount rate used should be higher than that used for projects in the home territory.

Ideally the starting point should be the discount rate used by companies which habitually engage in such projects, adjusted upwards to account for the fact that it is this company’s first such project.

In practice it will be difficult to get this information, and the home project discount rate should be used with an adjustment to account for the riskiness of the venture. Care must be taken to avoid spurious accuracy.

Although the discount rate needs to be adjusted upwards to take account of the extra risk of this project, care should be taken not to make it too high, as the relative weights placed on short term and longer term will be distorted.

It is not uncommon for companies to use very high discount or hurdle rates when appraising proposed projects. However, the use of a discount rate which is too high could distort the relative weights placed on the short term and on the longer term, thereby leading to mistaken decisions.

(b)

Weighted Average Cost of Capital (WACC)

The company currently has no debt finance, so the WACC is equal to the cost of equity, which

is given by:

$$\begin{aligned} & \text{Risk-free return} + (\text{Beta} \times \text{Equity risk premium}) \\ & = 2\% + (1.25 \times 4\%) = 7\% \end{aligned}$$

Advantages of using WACC

- Using the same cost of capital across an entire business leads to fewer internal problems.
- It is easy and quick.
- It reflects the overall riskiness of the company's existing portfolio of projects.

Disadvantages of using WACC

- The project may be riskier than other projects in the company's portfolio. In particular it may have more systematic risk than the average project.
- It should be evaluated using an appropriate return to reflect the higher beta for the project.
- The investors' expectations will change when this large project is added to the portfolio, thus the overall WACC will change.

(c)

Calculation of Net Present Value

Scenario A:

$$\begin{aligned} \text{NPV} &= -500 v^{0.5} + 175 v^{1.5} + 200 v^{2.5} + 225 v^{3.5} + 225 v^{4.5} \\ &= 187.12 \end{aligned}$$

Scenario B:

$$\begin{aligned} \text{NPV} &= -500 v^{0.5} + 150 v^{1.5} + 175 v^{2.5} + 200 v^{3.5} + 225 v^{4.5} \\ &= 123.69 \end{aligned}$$

Scenario C:

$$\begin{aligned} \text{NPV} &= -500 v^{0.5} + 100 v^{1.5} + 100 v^{2.5} + 75 v^{3.5} + 50 v^{4.5} \\ &= -212.52 \end{aligned}$$

Expected net present value of project:

$$= 0.3 \times 187.12 + 0.6 \times 123.69 + 0.1 \times (-212.52) = 109.10$$

If the timing of cashflows is wrong or any figure is wrong please don't provide any marks.

(d)

Sensitivity Tests

The company could perform any of the following sensitivity tests:

- The effect on the NPV if the income from call schemes increases / decreases by 10%.

- The effect on the NPV if the anticipated infrastructure increases / decreases by 10%.
- The effects of a half-year delay in all cashflows caused by licencing / legal problems.

(e)

Stochastic Model

Advantages

- Gives a spread of results rather than a single deterministic result.
- Increases the company's understanding of the parameters that are central to the profitability of the project.
- Allows the investigation of "outliers" – situations which may cause a particular blip in the overall profitability.

Disadvantages

- A great deal of effort is required.
- Is it justified given the quality of the data and estimates? If the input parameters are of poor quality, then so will be the output.
- How do you estimate the variability of the costs and how do you estimate the correlation between certain factors such as an increase in costs and incomes from call schemes etc. The correlations may be impossible to estimate.

(f)

Considerations on deciding whether the project should proceed

On average, this project is expected to make a profit.

On 90% of occasions, this project would show a profit but on 10% there would be a significant loss.

The loss could be as high as -213 or even more, if a scenario worse than C evolves.

The decision makers should also look at considerations outside the financial analysis, for example:

- Any bias or approximations in the estimates
- Doubts about the feasibility of entering a relatively unknown market and
- Any last minute developments.

They should also consider mitigation – insurance against worst outcome – and the sensitivity to the various assumptions.

The decision makers should evaluate this project against other available opportunities and determine whether this fits with other activities of the company before deciding to proceed.

[20]

18. a)

I) Dividend declaration – declared means not paid, they may appear as a note to the income statement, will be deducted from retained earnings in the equity section of the balance sheet and will appear as a current liability in the balance sheet.

II) Right Issue – Total value of the company is increased by extra money raised, bank balance is increased in asset side and share capital is increased in liabilities side.

III) Increase in receivables – Leads to an increase in debtors and reduction in cash, both will cancel out and leaves no effect on balance sheet.

IV) Share buy back – It will reduce the share capital in liabilities side, and reduce cash or bank balance in assets side, reducing the overall balance sheet by that amount.

b) Reserves = Fixed Assets + Investments + Current Assets + Goodwill – Share Capital – Current Liabilities.

$$= 2,000 + 1,200 + 2,500 + 2,000 - 1,500 - 500$$

$$= 5,700$$

Goodwill in the above data means, any amount paid in excess of the nominal value of the shares and reserves acquired by a holding company.

In theory, this is the amount which the holding company is paying for such intangibles as the reputation of the subsidiary, its customer base and its loyal workforce.

c) Profit and loss account for Financial Year 2008 – 09 of Sachdev Industries are as follows :-

Sales	2,000
Less: - Cost of sales	1,110 [824 + 100 – 324 + 510]
Less: - Office Expenses & Wages	<u>310</u>
Operating Profit	580
Add: - Interest received	60 [500*12%]
Less: - Interest on Debentures	<u>84 [700*12%]</u>
Profit before tax	556
Less: - Tax charge	<u>222</u>
Profit after tax	334
Less: - Dividends	<u>90 [Balancing Figure]</u>
Retained profits	<u>244 [Reserves 474 – 230]</u>

Cashflow statement for Financial Year 2008 – 09 of Sachdev Industries are

Operating Profit	580
+ Depreciation	100
+ Decrease in stocks	186
+ Decrease in debtors	70
- Decrease in creditors	(206)

Net Cashflows from Operations	730
+ Interest Received	60
- Interest Paid	(84)
- Dividend Paid	(276)
- Tax Paid	(440)
- Purchase of fixed assets	(100)
+ Proceed from sale of Investments	100
+ Proceed from issue of Debentures	100
Increase in Cash and Bank Balance	90

[20]

[Total 100 Marks]
