# Institute of Actuaries of India

## Subject CT2 – Finance & Financial Reporting

# May 2011 Examinations

### INDICATIVE SOLUTIONS

**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.** Ans. C **[Total Marks – 2]**

**2.** Ans. D **[Total Marks – 2]**

**3.** Ans. C **[Total Marks – 2]**

**4.** Ans. B **[Total Marks – 2]**

**5.** Ans. B **[Total Marks – 2]**

**6.** Ans. B **[Total Marks – 2]**

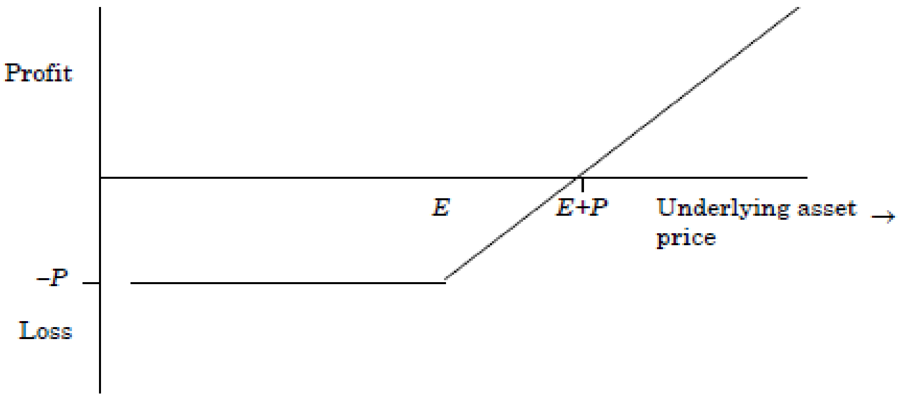
**7.** Ans. C **[Total Marks – 2]**

**8.** Ans. C **[Total Marks – 2]**

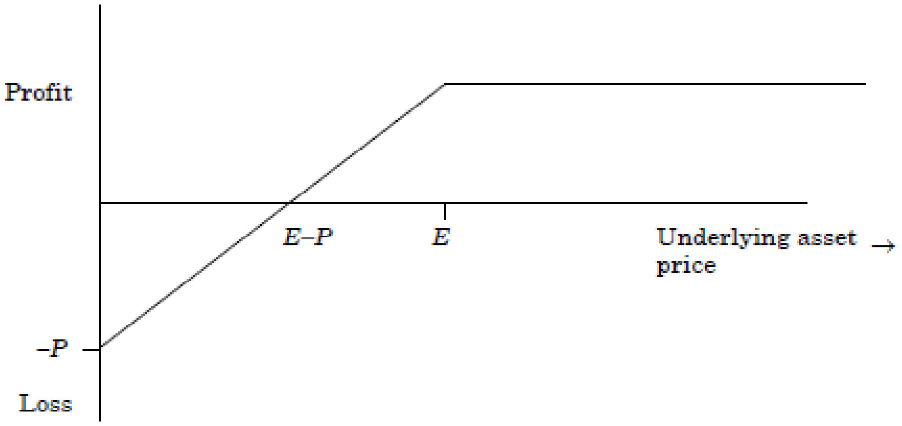
**9.** Ans. D **[Total Marks – 2]**

**10.** Ans. B **[Total Marks – 2]**

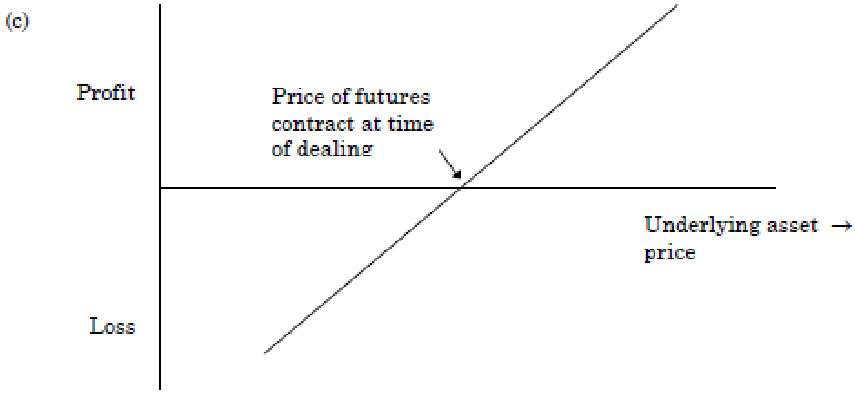
**11. Ans :**

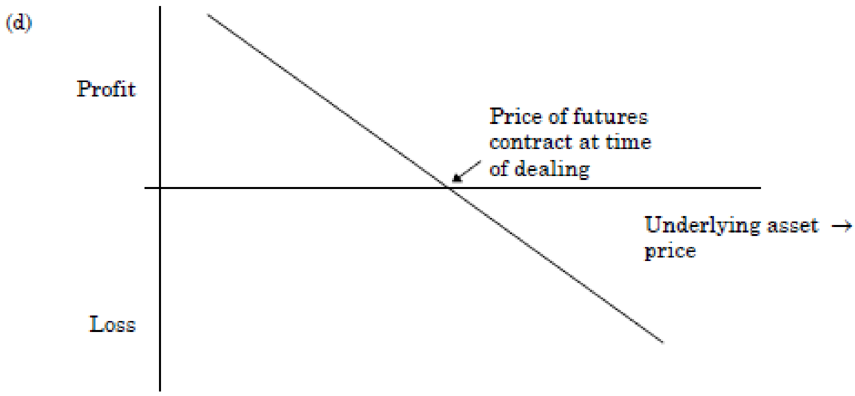



$E$ = Exercise price of call
$P$ = Call premium




$E$ = Exercise price of put
$P$ = Put premium




**[Total Marks – 4]**

**12. Ans:**

**a) Scrip dividend and two possibilities under it**

A scrip dividend means that a company pays shareholders a dividend by giving them new shares rather than cash.

- First possibility: Everyone has to accept the scrip dividend: This is just like a scrip issue (companies use scrip dividends of this type when they can't afford to pay a dividend but don't want to admit it!). You will end up with more shares worth less each.
- Second Possibility: there is a choice between a scrip dividend and a cash dividend: Unlike a scrip issue, the scrip dividend option is worth as much as the cash dividend. Those investors that accept the scrip dividend have more shares, but the market value of the shares will not have been forced down.

**b) IFRS**

- The standards that are issued by the IASB are called International Financial Reporting Standards (IFRSs). Once adopted they eliminate, or at least reduce, variations between companies in the way they prepare accounts across various geographies and improve comparability.
- IFRSs have helped both to improve and harmonise financial reporting around the world.

- IFRSs are used in many countries in the world including Singapore, Hong Kong, Russia, most European countries under the jurisdiction of the European Union, and Australia.

**c) Technical and non technical accounts**

- The income statement for an insurance company is divided into *technical* and *nontechnical* accounts.
- In general, all items relating to the main insurance business are shown in the technical account. This is divided further into separate accounts for different types of business.
- The non-technical account then brings together the profits from the two types of business and adds in any profit made on other non-insurance business.
- To this is added other items such as the investment return on investments other than those supporting the insurance business and tax on profit to give the overall profit to shareholders.

**d) Opportunity cost**

- It may be easy to put up a project that may satisfy the business criteria for acceptance but not be the best way of proceeding. There may be some alternative opportunity that is even better that has not been considered.
- The opportunity cost method asks "What alternative ways could we spend this money and what return would be achieved?"
- Thus, even if a project does satisfy the criteria applied by the company it might not be the best opportunity available to the company.
- The return company will get if it rejects the project and therefore invests the surplus cash in other areas like money market is the opportunity cost of the project.
- Second best alternative to which company's funds can be used.

**[Total Marks – 8]**

**13. Ans:**

- The calculation of profit involves a number of adjustments that do not involve any cash flows.
- Depreciation, gains or losses on disposal of fixed assets, accrued income and expenses affect profits but not cash flows.
- Investing and financing activities: there are many different transactions that can affect cash flows without any impact on the profit and loss account.
- Revenue Recognition: Revenue items earned and accounted in Profit and loss account but not received in cash. Similarly for accrued expenses not settled.
- Credit sale will increase profit but not cash.
- Prepaid expenses will reduce cash will not impact profit.
- For example, receipts and payments of loans, acquisitions and disposals of fixed assets, issue of shares all affect bank but not profit.
- In the very long term total profit and net cash flow should be roughly the same .
- Over time, the cost of fixed assets and the total depreciation charged will come into line with one another . That does, however, require a very long term outlook.
- If the business is growing then it is possible for increased profits to be associated with a decline in cash.
- The growth is often associated with additional investment in stock and debtors and that can lead to an outflow of cash.

- Furthermore, the fact that the company has done well might encourage an excessive dividend payment, more than the company can afford in cash terms.
- Stock valuation: Value of stock is undervalued or overvalued which will not impact the cash-flows.
- An alternative reason for differences may be fraud or error in the business accounting system.

**[Total Marks – 6]**

**14. Ans :**

- A stock repurchase enables the directors to return cash to the shareholders without having to pay dividends. This might prove more acceptable politically in certain circumstances (e.g. where the payment of a dividend would be embarrassing because of ongoing wage negotiations). It might also be more attractive from a taxation perspective.

- There are very stringent rules to restrict the amounts of capital that can be repurchased. The shareholders' capital provides some protection to the holders of loan capital.

- A repurchase would be in the interests of the shareholders if the company had surplus cash and was in a situation where its share price was undervalued.

- The directors could buy back some of the shares while the price is depressed and this would have the effect of concentrating the profits for those shareholders who remain with the company.

- In theory, it is unlikely that the directors could ever time a repurchase to take advantage of an anomaly in the share price. In an efficient market, the shares will always be stated at their "correct" price.

- That pricing mechanism will include the market's assessment of the company's future prospects. In order to exploit "inside" information, the directors would have to be in possession of some facts which the market could not have obtained or inferred from some
  other source.

- Given that the repurchase would be a costly signal, the markets might regard the event as having some deeper significance.

- In the short term it might have the effect of increasing the share price in anticipation of the announcement of the information that the directors felt had not been taken into account by the markets.

- In the longer term, it might attract the attention of both analysts and competitors, both of whom would be keen to establish the reasons for the directors' confidence.

- It shows management confidence in the company so management believes that share price is not reflecting its true value so it will be good to invest in own stock till the discovers its true value.

- Share buyback reduces the free float of shares and which helps the company form hostile takeover as numbers of share available will be reduced and buying shares from secondary market for hostile takeover will be difficult.

**[Total Marks – 10]**

**15. Ans :**

- If the company purchases the assets then it will receive a writing down allowance on both the industrial buildings and the plant and machinery.
- This means that the tax benefits of the investment will not be received immediately after the investment takes place. Instead, the company will have to offset the cost against taxable profit in future years.
- If the company borrows in order to finance the acquisition of the assets then it will be able to claim tax on the interest payments.
- Rental payments on property and lease payments on plant and machinery will attract immediate tax relief, with the taxable profit being reduced by the amounts of the cash flow in each year.
- The company's ability to enjoy the tax relief on writing down allowances is related to its ability to earn taxable profits.
- **No capital gain tax as no resale of leased assets.**
- If the company is making a loss for tax purposes then it will receive no benefit from the additional writing down allowances. A lessor may be in a better position to take advantage of these reliefs and this may well be reflected in the rentals.

**[Total Marks – 7]**

**16. Ans :**

- **(i) –**
  - Add back any business expenses or potential expenditure shown in the accounts which are not allowable for tax.
  - Add back any charge for depreciation, and instead subtract the allowable "capital allowance"
  - Deduct any special reliefs, e.g. research and development costs may be able to be deducted immediately.
- **(ii) –**
  - Tax free income –
    - Most forms of social security benefits
    - Dividends declared by companies
    - Income from agricultural activities.

  Any other tax free income as per Indian Tax Laws will be eligible for marks.

- Tax free expenditure –
    - Contribution to approved pension schemes
    - Charitable gifts
    - Interest on housing loan
    - Life insurance premium and Equity linked saving schems subject to maximum limit.

Any other tax free expenditure as per Indian Tax Laws will be eligible for marks.

- **(iii)** – Exceptions to chargeable capital gain tax are –
    - Private motor cars
    - Foreign currency obtained for personal use
    - Govt securities and other qualifying fixed – interest stocks.

Any mention of LTCG on share sale will not be considered for mark as it is not exception of capital gains tax.

**[Total Marks – 5]**

**17. Ans :**

The cash flows are summarized in the following table

**Alternative I**

| | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Upgradation of Computer & purchase of new software | -80000 | | | | | |
| Installation Charges | -5000 | | | | | |
| Increase in Net Working Capital | -20000 | | | | | |
| Net Increase in Profits | | 650000 | 425000 | 317000 | 220000 | 129000 |
| Depreciation on Upgraded Computer | | 32000 | 19200 | 11520 | 6912 | 4147 |
| Incremental PBT | | 618000 | 405800 | 305480 | 213088 | 124853 |
| Income Tax - 40% | | 247200 | 162320 | 122192 | 85235.2 | 49941 |
| Tax Shield on Installation Cost | | 2000 | | | | |
| NOPAT | | 370800 | 243480 | 183288 | 127853 | 74912 |
| **Operating Cash Flows** | | **404800** | **262680** | **194808** | **134765** | **79059** |
| **Terminal Cash Flows net of capital gains tax on disposal** | | | | | | **25488** |
| **FCFF** | **-105000** | **404800** | **262680** | **194808** | **134765** | **104547** |
| **NPV** | **783,415** | | | | | |

**Alternative II**

| | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| New Computer System & purchase of new software | -100000 | | | | | |
| Installation Charges | -5000 | | | | | |
| Increase in Net Working Capital | -15000 | | | | | |
| Net Increase in Profits | | 350000 | 350000 | 350000 | 350000 | 350000 |
| Depreciation on Upgraded Computer | | 40000 | 24000 | 14400 | 8640 | 5184 |
| Incremental PBT | | 310000 | 326000 | 335600 | 341360 | 344816 |
| Income Tax - 40% | | 124000 | 130400 | 134240 | 136544 | 137926 |
| Tax shield on Installation Cost | | 2000 | | | | |
| NOPAT | | 186000 | 195600 | 201360 | 204816 | 206890 |
| **Operating Cash Flows** | | **228000** | **219600** | **215760** | **213456** | **212074** |
| **Terminal Cash Flows net of capital gains tax on disposal** | | | | | | **24110** |
| **FCFF** | **-120000** | **228000** | **219600** | **215760** | **213456** | **236184** |
| **NPV** | **723,309** | | | | | |

a. Cash Flows for year 0 in the above table: Alternative 1: Rs 105000, Alternative 2: Rs. 120000

b. Operating Cash Flows values in the above table

c. Terminal Cash Flows values in the above table: Alternative 1: Rs 25488, Alternative 2: Rs.
d. Alternative 1: Rs. 782808, Alternative 2: Rs. 724414. Choose Alternative 1 as it has higher NPV.

e. At the same discount rate of 10%, Alternative 1 has got a higher NPV. Intuitively higher the IRR vis-a vis the cost of capital, more should be the NPV. So Alternative 1 has the higher IRR.

**[Total Marks – 20]**

**18. Ans :**

Profit and Loss Account
For the FY 2010-2011

| | Debit | Credit |
|---|---|---|
| Sales | | 13000 |
| *Less* | | |
| Factory running costs | 1200 | |
| Material consumed | 1600 | |
| Manufacturing wages | 1300 | -4100 |
| Gross Profit | | 8900 |
| *Less* | | |
| Sales salaries | 1600 | |
| Administration costs | 800 | |
| Loan interest | 1680 | -4080 |
| Net Profit | | 4820 |
| Tax | 1290 | |
| Dividend | 1400 | -2690 |
| C. Y Profit | | 2130 |

Balance sheet
as on 31st March 2011

| | |
|---|---|
| *Liabilities* | |
| Share capital 12,000 | 12000 |
| Profit and Loss | 2510 |
| Bank overdraft | 700 |
| Long term loans | 12000 |
| Trade creditors | 600 |
| Tax | 1290 |
| Dividend | 1400 |
| Revaluation Reserves | 3500 |
| **Total** | 34000 |
| *Assets* | |
| Machinery | 7000 |
| Factory | 25000 |
| Stock | 700 |
| Debtors | 1300 |
| **Total** | 34000 |

**<u>Working Notes</u>**

*Factory Account*

| | |
|---|---|
| Opening balance | 23300 |
| Closing balance | 25000 |
| Transfer to Revaluation Reserve | 1700 |

*Factory Depreciation Account*

| | |
|---|---|
| Opening | 1340 |
| Additions | 460 |
| Closing balance | 0 |
| Transfer to Revaluation Reserve | 1800 |

*Machinery Account*

| | |
|---|---|
| Closing | 15000 |

| | | |
|---|---|---|
| balance | | |
| During the year addition | | 2700 |
| Opening balance - balancing figure | | 12300 |

*Tangible Fixed assets*

| | | |
|---|---|---|
| Factory | | 25000 |
| Machinery | 15000 | |
| less | | |
| Depreciation | 8000 | 7000 |
| | | 32000 |

**[Total Marks – 20]**

**[Total Marks – 100]**

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