Institute of Actuaries of India

Subject CT2 – Finance and Financial Reporting

September 2018 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.

Solution 1:   D   **[2 Marks]**

Solution 2:   B   **[2 Marks]**

Solution 3:   C   **[2 Marks]**

Solution 4:   B   **[2 Marks]**

Solution 5:   C   **[2 Marks]**

Solution 6:   C   **[2 Marks]**

Solution 7:   B   **[2 Marks]**

Solution 8:   C   **[2 Marks]**

Solution 9:   C   **[2 Marks]**

Solution 10:   D   **[2 Marks]**

Solution 11:

i)   Kriti firstly should consider the professional implication of admitting Avinash as a partner. The professional standing of the firm should get a boost or should not be adversely impacted by this decision.

      Also, the new partner will be entitled to an agreed share of any profits, which could prove expensive to Kriti.

      On the other side, it might help Kriti in retaining the employee and in generating long term surplus funds (as Avinash will be expected to buy into the partnership).

                                                                                                        [3]

ii)   For Avinash, this may be a good long term employment and investment opportunity if the business is already well established and running smoothly.

      As a new partner however, Avinash will also be jointly and severally liable with the old partner, even if the liabilities arise from an act or omission on her part   [2]

iii)   The LLP structure protects the members from claims against their personal wealth. The LLP is a separate legal entity and its creditors cannot pursue the partners if the LLP's assets prove insufficient. Several actuarial firms in India are set up as LLPs.   [1]

                                                                            [6 Marks]

Solution 12:

i) The beta of a project is a measure of the systematic risk of the project relative to adiversified portfolio of all risky assets (ie the market). The market would have a beta of 1.

The beta of the company $\left(\beta_p\right)$ is given by the following formula:

$$\beta_p = \frac{\sigma_{pm}}{\sigma_m^2}$$

where:

σ_{pm} is the covariance between the returns expected from the company and the returns expected from the market

σ_m^2 is the variance of the returns expected from the market   [1]

[1+1=2]

ii) The beta of the company may be measured by:
- looking at the company's historical returns on equity and comparing against market returns, but subject to significant variation for example dependent upon the time period considered
- considering the industry beta based on a range of companies undertaking similar activities
- estimating, based on knowledge of the company and its industry and how the industry might react to changes in the market

[3]

iii) A stock with a beta of 1 implies that the stock behaves in line with the market. Depending on expectations of market movements, as an aggressive investor, I may wish to invest in stocks with higher positive beta to maximize short-term gains.

A stock with a negative beta of 1 signifies that the stock behaves opposite to the market. If the market index improves, the stock will lose value and vice-versa. Is a downturn in the market is expected, low beta stocks may be attractive in the short to medium term.

[2]

iv) Cash   [1]

[8 Marks]

Solution 13:

i) Considerations could be:

- Is there potentially a big market for the product in India? Has the take up been tested elsewhere in a similar market?
- Are there are restrictions around launching the product in India?
- Will the product price be suitable for the Indian population?
- Can the product be manufactured locally – production synergies
- Synergies with existing products – can it be packaged as complementary to existing products
- First mover advantage
- Feedback from medical practitioners
- Does preventive medication have a sizeable market in India?

[4]

ii) Measures of project appraisal

- Net Present Value (NPV) – Can be used if cash flows can be ascertained with a reasonable level of confidence. Choice of risk discount rate is tricky as new project for the Indian market. Scenario based approach may be used.
- Internal Rate of Return (IRR) – Inherent difficulties such as complex calculation, may not exist, single point measure which is not very useful in isolation
- Discounted payback period - Relevant if the initial investment is significant and likely to impact Company's dividend payout plans. Also important to examine synergies with any other planned projects
- Shareholder value –Likely impact of investment on share price – will the investment be viewed favorably for long-term growth? Market may not see much value in preventive medication in the Indian market.

[4]
[8 Marks]

Solution 14:

1. Previously, dividend payout decisions are likely to have been based on the business expansion plans coupled with the preference of the limited number of 1-3 shareholders, which in turn could be based on their own tax position and investment horizon.

2. Post listing, market sentiment will need to be kept in mind while making dividend payout decisions. Many stock market analysts compare shares to one another on the basis of dividend yields. Stock market analysts will find the share relatively more attractive if the dividend yield is higher.

3. Long-term insurance business is capital intensive hence aggressive expansion plans will strain profits hence any dividend declaration must be prudent and sustainable.
4. Dividend decision should be aligned with the investor base (in terms of tax position and nature of investors). Investors who are putting money in insurance company stocks recognizing the long term return potential of the industry will not be uncomfortable with a modest dividend payout policy. Frequent changes however should be avoided.
5. Competitor dividend practice should be kept in mind.

[5 Marks]

Solution 15:

i)   Cost of equity = Risk-free rate + beta * Equity risk premium

                             = 7% + 1.5 * 5%

                             = 14.5%

    Cost of debt   = Cost of debt * (1-Tax Rate)

                             = 9% * (1 - 25%)

                             = 6.75%

    WACC   = 0.5 * 14.5% + 0.5 * 6.75%

                             = 10.625%

                                                                    [2]

ii)   Ungeared beta needs to be computed.

$$\beta_g = \beta_u \times \left(1 + \frac{D}{E}(1-t)\right)$$

    1.5   = Ungeared beta * (1 + 1/1 *(1-25%))

              = Ungeared beta * 1.75

Ungeared beta = 1.5 / 1.75 = 0.857143

New cost of equity = Risk-free rate + Ungeared beta * Equity risk premium

                                   = 7% + 0.857143 * 5%

                                   = 11.29%

                                                                  [2]

                                                           [4 Marks]

      Solution 16:

Option 1 – Convertible loan stock

- Financing interest payments during the debt phase of the instrument are a challenge, although interest rate will be lower than bank finance.
- Will be particularly onerous as there may be initial capital outlay / new business strain.
- If the business succeeds, the chances are that the bondholder will convert the bond to shares. That will dilute her equity and will reduce her return from having taken the initiative to start this business and work to make it a success.
- Downside risks appear to be larger than upside potential.

Option 2 – Equity stake
- Initial expenses will be financed – no debt burden
- Lesser micro decision making freedom if the equity partner is very active – more accountability for business model, expenses etc.
- Valuation at the end of three years may be a challenge (subjective).
- Good upside potential, protection against downside risks

If Shivali is personally invested in the idea and has limited own funds, Option 2 may be better in the initial phase.

[5 Marks]

Solution 17: Derivative contracts

1. Forward contract - A forward is an agreement between two parties to trade a specified asset at a set date in the future at a set price.
2. Future contract - A futures contract is a standardized, exchange tradable contract between two parties to trade a specified asset on a set date in the future at a specified price. A financial future contract is based on an underlying financial instrument rather than a physical commodity.
3. Options - An option gives an investor the right, but not the obligation, to buy or sell a specified asset on a specified future date. Types of options available – put / call, European / American
4. Swaps - A swap is a contract between two parties under which they agree to exchange a series of payments according to a prearranged formula. Interest rate swaps and currency swaps both available.

[4 Marks]

Solution 18:
i) The main content of an auditor's report are:
   1. A title, identifying the person or persons to whom the report is addressed.
   2. An introductory paragraph identifying the financial statements audited.
   3. Separate sections, appropriately headed, dealing with:
      a. Respective responsibilities of directors and auditors
      b. The basis of the auditors' opinion

    c. The auditor's opinion on the financial statements

  4. The manuscript or printed signature of the auditors, with the address

  5. The date of auditor's report.

[3]

ii) Matching Concept: Income and expenses which relate to each other should be matched together and dealt within same statement of profit or loss. The matching Concept is a mixture of the realization and accruals concept.

Dual aspect Concept: The dual aspect concept recognizes that every transaction or adjustment will affect two figures. This concept forms the basis for the double entry bookkeeping system.

[3]

[6 Marks]

Solution 19:

The possible limitation and challenges are as follows –

    i. Different regulation will govern these companies on a same subject may bring difficulty in comparison e.g. solvency ratio.
    ii. There may be subjectivity involves in few sections of accounts e.g. revaluation of assets, accounting of tangible assets.
    iii. There is be difference between these companies as their business is different which will make comparison difficult e.g. Reserve utilization.
    iv. There is inherent limitation in different ratio analysis e.g. ignore the size of business

[4 Marks]

Solution 20:

Profit and Loss Account For the year ended December 31, 2017

Revenue		Amount (INR)
Fee Revenue Earned		58,000
Investment Income		200
Total		**58,200**
Employees' Salaries	(14,000)	
Office Supplies	(1,000)	
Office Electricity	(4,000)	
Mobile and Internet Bill	(583)	
Depreciation		
Laptops	(3,208)	
Office Equipment	(1,833)	
Office Building Rent	(14,207)	
Income Tax	(3,000)	

Total	**(41,832)**	
Total Profit		**16,368**

Calculation Details:-

Fee Revenue Earned= 55,000+2,000+1,000= 58,000

Employees' Salaries= 10,000+4,000= 14,000

Office Supplies= 2,000-1,000= 1,000

Office building rent= 15,917-1000*1.05^11= 14,207

Depreciation:

Laptops= 35,000*(1/10)*1(11/12) = 3,208

Office Equipment= 20,000*(1/10)*1(11/12) = 1,833

Balance Sheet as on December 31, 2017

Asset (in INR)		
Laptops	35,000	
Less: Depreciation	3,208	31,792
Office Equipment	20,000	
Less: Depreciation	1,833	18,167
Office Supplies		1,000
Trade Receivables		1,500
Cash		1,000
Bills Receivables		5,000
Office Building Rent		1,710
Revenue Receivable		2,000
Interest Receivable		200
Total Assets		**62,368**
Liabilities (in INR)		
Trade Payables		3,000
Unearned Fees*		9,000
Employees' Salaries Payable		4,000
Income Tax Payable		3,000
Share Capital		32,000
Retained earnings		11,368
Total Liabilities		**62,368**

*Unearned Fees: 10,000-1,000= 9,000

Statement of Retained Earnings:

Retained Earnings Calculation:

Net Profit for the year = 16,368

Less Dividend= (5000)

Net Retained = 11,368

[20 Marks]

Solution 21:

i)   Cost of Goods Sold = Revenue from Operations – Gross Profit
   = Rs. 3,00,000 – (Rs. 3,00,000 × 20%) = Rs. 3,00,000 – Rs. 60,000 = Rs. 2,40,000

   Inventory Turnover Ratio = Cost of Revenue from Operations/ Average Inventory
   Average Inventory = Cost of Revenue from Operations/4 = Rs. 2,40,000/4 = Rs. 60,000

   Average Inventory = (Opening inventory + Closing inventory)/2
   Rs. 60,000 = Opening inventory + (Opening inventory +Rs.20,000)/2
   Rs. 60,000 = Opening inventory + Rs. 10,000
   Opening Inventory = Rs. 50,000 and Closing Inventory = Rs. 70,000

   Quick Ratio = Quick Assets/current liabilities
   0.75 = Quick assets/Rs. 40,000
   Quick Assets = Rs. 40,000 × 0.75 = Rs. 30,000

   Current Assets = Quick assets + Closing inventory = Rs. 30,000 + Rs. 70,000 = Rs. 1,00,000

[6]

ii)

   a) Decrease Debt Equity Ratio
   b) No change
   c) No change
   d) Decrease Debt Equity Ratio
   e) No change
   f) No change
   g) Increase Debt Equity
   h) No change

[4]
[10 Marks]

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