

# **Institute of Actuaries of India**

**Subject CT2 – Finance and Financial Reporting**

Nov 2012 Examinations

**INDICATIVE SOLUTIONS**

**Questions & Solutions :**

1.

To calculate taxable profit out of accounting profit which of the following adjustments is NOT correct?

- A. Adding back fines for illegal acts
- B. Adding back depreciation
- C. Deducting capital allowances
- D. Deducting interest on debentures

Ans: D

**[2 Marks]**

2. Which of the following statement is TRUE for a limited liability partnership (LLP)?

- A. Any firm consisting of 2 or more members
- B. Any firm consisting of 2 or more partners
- C. Any firm consisting of 2 or more directors
- D. Any firm consisting of 2 or more shareholders

Ans: A

**[2 Marks]**

3. Which of the following statement is false for open ended investment companies?

- A. They issue shares on a stock exchange
- B. The price for their shares is determined like a unit trust
- C. There is a bid/offer spread in their shares
- D. They use shareholder money to invest in other companies

Ans: C

**[2 Marks]**

4. Which of the following statements is/are true?

- I. If a project has a large amount of systematic risk, then the discount rate used to value the cash-flows should be raised to reflect the risk.
  - II. A large, well-diversified portfolio of projects should have little or no specific risk.
  - III. No amount of diversification can remove the systematic risk involved in a project.
- A. I only
  - B. II and III only
  - C. I and III only
  - D. all of the above

Ans: D

**[2 Marks]**

5. Which of the following is not a concessionary method of obtaining a listing?

- A. Offer for sale
- B. Offer for subscription
- C. Placing
- D. Introduction

Ans: A

[2 Marks]

6. Revaluation of land & buildings defies which accounting concept?
- A. Consistency
  - B. Cost
  - C. Realisation
  - D. Accruals

Ans: B

[2 Marks]

7. In India, in most cases of long term capital gains on sale of assets, capital gains tax is levied on
- A. Indexed purchase price.
  - B. Sales price (less) purchase price.
  - C. Sales price (less) purchase price (less) expenses incurred to complete the sale(e.g. brokerage,commission etc.)
  - D. None of the above.

Ans: D

[2 Marks]

8. For which of the following reasons is an interest rate swap not used?
- A. To convert a floating rate loan into a fixed rate loan.
  - B. To bet on the direction of future movement in interest rates.
  - C. To match assets and liabilities in different currencies.
  - D. To reduce the cost of debt.

Ans: C

[2 Marks]

9. Under the capital asset pricing model (CAPM), the cost of equity is not related to the:
- A. Risk free rate of interest
  - B. Market risk premium
  - C. Diversifiable risk
  - D. Non-diversifiable risk

Ans: C

[2 Marks]

10. If sales are Rs. 20,00,000; Gross profit ratio is 10%; value of closing inventory is Rs. 2,10,000 and value of opening inventory was Rs. 1,90,000; then the stock turnover period is(assume a year with 360 days)?
- A. 9 times

- B. 40 days
- C. 37.8 days
- D. 38 days

[2 Marks]

Ans: B

**Question 11**

- a) Which are the two distinct ways in which equity shareholders could be rewarded without any immediate cash outflow for the company? (1)
- b) Define share buyback, and give possible reasons why a company would generally opt for a share buyback. (2)
- c) List the four ways in which a share buyback may be implemented. (2)
- d) Explain the purpose of a scrip issue. (4)
- e) Explain the downside of a scrip issue. (1)

[10 marks]

**Answer 11 a)**

Two ways in which equity shareholders could be rewarded without an immediate cash outflow are

- i) Scrip Dividend
- ii) Offering product samples and discounts on services.

**[Maximum 1 mark--1/2 mark for each point- "Share Buyback" and "Dividends" is not a valid answer and shouldn't be rewarded as it leads to a cash outflow]**

**Answer 11 b)**

Share buyback is the reacquisition by a company of a certain number of its own shares.

(1/2)

The company would opt for share buyback for the following reasons

- i) It has accumulated large amounts of unwanted cash and currently sees no viable project or expansion requirement where it could be utilised.
- ii) It wishes to change its capital structure by replacing equity with debt.
- iii) To reduce the threat of a hostile takeover.
- iv) If the current market price of the company's shares is too diluted and the company wishes to enhance the value per share.

(1/2 mark for each point-Maximum 1 1/2)

**Answer 11 c)**

The four ways in which a share buyback can be implemented are:

- i) Purchase of shares in the open market, often by a gradual program over a period of time.
- ii) A fixed price offer.
- iii) A tender offer (either a Dutch or a uniform price offer)
- iv) Repurchase by direct negotiation with a major shareholder

**( $\frac{1}{2}$  mark for each point-Maximum 2)**

### **Answer 11 d)**

The arguments to support a scrip issue are largely psychological

Following are the potential reasons for making a scrip issue

- i) **Marketability:** If the shares are currently having a high market price, small investors will not be able to invest in the company due to the large ticket size. This may adversely affect marketability of the shares. Scrip issue will reduce the market price and ensure greater marketability.
- ii) **Meeting shareholder's expectations:** If the company has regularly paid dividends but is currently unable to pay any dividend due to cash shortage or due to future investment plans, then not giving anything to the shareholders may lead to adverse market reaction and a drop in the share price. In such a case, a scrip issue will help appease the shareholders as they get something for nothing.
- iii) **Legal Requirements:** If applicable laws, regulations and statutes require the company to have a certain amount of share capital before it can undertake a certain activity, then a scrip issue will help to meet this requirement. This may be necessary if the company cannot make a public offering or a rights issue due to current adverse market conditions or poor performance of the company in recent times.
- iv) **Proof of past success:** Since a scrip issue requires the company to have sufficient reserves to be capitalised, the fact that a company is making a scrip issue underlines/reinforces the past success it has enjoyed and acts as a positive psychological factor for investors.
- v) It has generally been observed that the company's share price does not reduce in the same proportion as the increase in the number of shares due to the above mentioned positive psychological factor. So the shareholders enjoy an increase in wealth as well.
- vi) **Future confidence:** A scrip issue generally reduce a company's ability to make further rights issue in the near future. So if the directors have decided to make a scrip issue, it indicates their confidence about the company's future prospects.
- vii) **Increased dividends:** Some companies have a habit of having a light scrip issue(e.g. 1 for 10) and subsequently keeping the same dividend per share. This will lead to a higher dividend for the shareholder.

[Points i), ii), iii) carry 1 mark each while remaining points carry ½ mark-Maximum- 4 marks]

**Answer 11 e)**

Following could be considered as the downside of a scrip dividend

- i) The huge administrative costs incurred for issuing the new shares and for informing shareholders' may be considered wasteful by many shareholders.
- ii) Whenever records of dividends or share prices are needed (e.g. capital gains calculations), care is needed to eliminate the artificial impact of a scrip issue. So it leads to additional costs for everyone
- iii) It may induce speculative trading in the company's shares.

[½ mark for each point-Total 1 mark]

[Total Marks – 10]

**Question 12**

Armstrong Ltd. has provided you with the following statement of financial position as on 31<sup>st</sup> March 2011.

**Armstrong Ltd.  
Statement of financial position as on 31<sup>st</sup> March 2011**

Figures in '000

Particulars	Amount (Rs.)	Amount (Rs.)
Non current assets (Building)		1,050,000
Investments		1,550,000
<u>Current assets</u>		6,700,000
Trade receivables	4,025,000	
Inventory	2,519,000	
Prepaid insurance	17,000	
Cash and bank balance	139,000	
<b>TOTAL OF ASSETS</b>		<b>9,300,000</b>
Share Capital		5,000,000
Reserves and surplus		500,000
<u>Long Term Loans</u>		1,035,000
Loan from Creative Bank	1,035,000	
<u>Current liabilities</u>		2,765,000

Trade payables	2,520,000	
Outstanding salary	35,000	
Deposit from Shahrukh Ltd.	210,000	
<b>TOTAL OF LIABILITIES</b>		<b>9,300,000</b>

Armstrong Ltd. has appointed you as its new Accounts Manager after the previous Manager has resigned. The Director has provided you with the Consolidated Receipts and Payments account for the year ended on 31<sup>st</sup> March 2012 as was prepared by the previous Manager before he left.

### Consolidated Receipts and Payments Account for the year ended 31st March 2012

Figures in '000

Receipts	Amount (Rs.)	Payments	Amount (Rs.)
Opening balance	139,000	Shahrukh Ltd.	135,000
Cash sales	2,520,000	Salaries	895,000
Amitabh Ltd.	500,000	Cash purchases	1,502,000
Trade receivables	9,025,000	Octroi charges	30,000
Sale of investments	495,000	Repairs and maintenance	27,500
		Creative bank loan	1,060,000
		Trade payables	6,040,000
		Freight and taxes	9,300
		Postage and stationary	15,650
		Electricity charges	24,050
		Insurance	38,000
		Legal charges	48,000
		Audit fees	30,000
		Entertainment expenses	95,000
		Machinery	1,320,000
		Advertisement expenses	35,450
		Investments purchased	423,400
		Loading and unloading charges	23,650
		Wages	700,000
		Travelling	55,000
		Miscellaneous expenses	20,000
		Closing balance	152,000
<b>TOTAL</b>	<b>12,679,000</b>	<b>TOTAL</b>	<b>12,679,000</b>

**Note:** A Receipts and payment account is simply the consolidated cash and bank account wherein Receipts (left side) represents the actual amounts received on account of different inflows and the Payments (Right side) represents the actual amounts paid on account of different heads. They may or may not entirely pertain to the current accounting period.

Based on your analysis and study after joining and the information provided by the Director, you realise that the following adjustments must also be given effect while preparing the Income Statement for the year ended 31<sup>st</sup> March 2012 and the Statement of financial position as on that date.

- 1) Balances as on 31<sup>st</sup> March 2012.
  - a. Inventory Rs. 1,826,250,000
  - b. Salary paid in Advance Rs. 35,000,000
  - c. Trade Payables Rs. 2,901,000,000
- 2) Credit Sales during the year was Rs. 9,950,000,000.
- 3) Of the total trade receivables as on 31<sup>st</sup> March 2012, a client company from which Rs. 50,000,000 was due became insolvent and the Director feels that nothing would be recoverable from it. He has also asked you to make a provision for doubtful debts @ 2% on balance trade receivables.
- 4) Loan from Creative Bank was paid in full with interest.
- 5) Investments having a book value of Rs. 400,000,000 as on 31<sup>st</sup> March 2011 were sold during the year for Rs. 495,000,000.
- 6) The current Insurance policy for Building and Inventory expires on 30<sup>th</sup> September 2012.
- 7) New Machinery was purchased on 1<sup>st</sup> October 2011. Depreciation should be provided @ 10% p.a. on machinery.

**Additional Information:**

- 1) Goods are sold and purchased both on cash and credit.
- 2) Shahrukh Ltd has been the dealer of goods manufactured by Armstrong Ltd. Shahrukh Ltd had maintained an interest free security deposit with Armstrong Ltd. However a part of the deposit was refunded during the accounting period due to favourable credit history.
- 3) Amitabh Ltd. has been newly appointed as a dealer of Armstrong Ltd. An interest free security deposit has been received from them during the accounting period.

You are required to prepare the following:

- a) Statement showing calculation of total purchases during the year (cash and credit combined together). (2)
- b) Statement showing calculation of trade receivables balance before provision for doubtful debts as on 31<sup>st</sup> March 2012. (2)

- c) Statement showing balance of investment as on 31<sup>st</sup> March 2012 and profit on sale of investment. (1.5)
- d) Statement showing amount of salary and insurance expenses incurred for the year ended on 31<sup>st</sup> March 2012. (2)
- e) Income statement for the year ended 31<sup>st</sup> March 2012. (8.5)
- f) Statement of financial position of Armstrong Ltd. as on 31<sup>st</sup> March 2012. (6)

[Total - 22 Marks]

**Answer 12) a)**

Calculation of total purchases (cash and credit combined)

Figures in '000

Particulars	Amount (Rs.)	Marks
Payments made to trade payables	6,040,000	
(Add) Closing balance	2,901,000	
	8,941,000	<b>0.5</b>
(Less) Opening balance	2,520,000	
Credit purchases	6,421,000	<b>1</b>
(Add) Cash purchases	1,502,000	
Total purchases	<b>7,923,000</b>	<b>0.5</b>

**Answer 12) b)**

Calculation of trade receivables before provision for doubtful debts

Figures in '000

Particulars	Amount (Rs.)	Marks
Opening balance	4,025,000	
(Add) Credit sales	9,950,000	
	13,975,000	<b>0.5</b>
(Less) Payment received	9,025,000	
Total trade receivables	4,950,000	<b>1</b>
(Less) Bad debts	50,000	
Net trade receivables before provision for doubtful debts	<b>4,900,000</b>	<b>0.5</b>

**Answer 12) c)**

Balance of investment as on 31<sup>st</sup> March 2012 and profit on sale of investment.

Figures in '000

Particulars	Amount (Rs.)	Marks
Opening balance	1,550,000	
(Less) Book value of investments sold	400,000	
	1,150,000	<b>0.5</b>
(Add) New investments during the year	423,400	
Closing balance of investment	1,573,400	<b>0.5</b>

Profit on sale of investments: Sales price received (Less) book value  
 = 495,000,000 (-) 400,000,000 = Rs.95,000,000

**(0.5)**

**Answer 12) d)**

Salary expenses incurred for the year ended on 31<sup>st</sup> March 2012.

Figures in '000

Particulars	Amount (Rs.)	Marks
Amount actually paid as per receipts and payments account	895,000	
(Less) Outstanding as on 31 <sup>st</sup> March 2011	35,000	
	860,000	
(Less) Paid in advance as on 31 <sup>st</sup> March 2012	35,000	
Salary expenses incurred for the year ended on 31 <sup>st</sup> March 2012.	825,000	<b>1</b>

Insurance expenses incurred for the year ended on 31<sup>st</sup> March 2012.

Figures in '000

Particulars	Amount (Rs.)	Marks
Amount actually paid as per receipts and payments account	38,000	
(Add) Prepaid as on 31 <sup>st</sup> March 2011	17,000	
	55,000	
(Less) Paid in advance as on 31 <sup>st</sup> March 2012[(6/12)*38000]	19,000	
Insurance exps incurred for the year ended on 31 <sup>st</sup> March 2012.	36,000	<b>1</b>

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**Answer 12) e)**

Armstrong Ltd.  
Income statement for the year ended 31st March 2012

Figures in '000

Particulars	Amount (Rs.)	Amount (Rs.)	Marks
<b>Sales revenue</b>		12,470,000	<b>0.5</b>
Cash sales	2,520,000		
Credit Sales	9,950,000		
<b>Cost of sales</b>		9,378,700	<b>0.5</b>
Opening inventory	2,519,000		
Purchases [Answer 12 a)]	7,923,000		
Octroi charges	30,000		
Wages	700,000		
Freight and taxes	9,300		
Loading and unloading	23,650		
	11,204,950		
(Less) Closing inventory	1,826,250		
<b>Gross profit</b>		3,091,300	<b>1</b>
<b>Expenses</b>		1,450,650	<b>0.5</b>
Salaries [Answer 12 d)]	825,000		
Insurance [Answer 12 d)]	36,000		
Interest on loan	25,000		<b>0.5</b>
Repairs and maintenance	27,500		
Postage and stationary	15,650		
Electricity charges	24,050		
Legal charges	48,000		
Audit fees	30,000		
Entertainment expenses	95,000		
Advertisement	35,450		
Miscellaneous expenses	20,000		
Travelling	55,000		
Bad debts	50,000		
Provision for doubtful debts	98,000		<b>0.5</b>
Depreciation	66,000		<b>0.5</b>

<b>Operating profit</b>		1,640,650	<b>0.5</b>
Profit from sale of investment		95,000	<b>0.5</b>
[Answer 12 c)]			
<b>Net Profit</b>		1,735,650	<b>1</b>

[Balance 2.5 marks to be allotted to miscellaneous items in the Income statement for which marks have not been specified with ½ mark being deducted for each error in posting these miscellaneous items which have no adjustment.]

(Total : 8.5 marks)

**Answer 12) f)**

Armstrong Ltd.  
Statement of financial position as on 31st March 2012

Figures in '000

Particulars	Amount (Rs.)	Amount (Rs.)	Marks
<b>Non-current assets</b>		<b>2,304,000</b>	
Building	1,050,000		
Machinery			
Purchases	1,320,000		
(-) Depreciation @ 10% for 6 months	66,000		
	1,254,000		<b>0.5</b>
<b>Investments [Answer 12 c)]</b>		<b>1,573,400</b>	<b>0.5</b>
<b>Current assets</b>		<b>6,834,250</b>	
Trade receivables			
Balance before provision	4,900,000		
(-) Provision for doubtful debts @ 2%	98,000		
	4,802,000		<b>0.5</b>
Inventory	1,826,250		<b>0.5</b>
Prepaid insurance	19,000		<b>0.5</b>
Prepaid salary	35,000		<b>0.5</b>

Cash and bank balance	152,000		<b>0.5</b>
<b>TOTAL OF ASSETS</b>		<b>10,711,650</b>	
<b>Share capital</b>		<b>5,000,000</b>	<b>0.5</b>
<b>Reserves and surplus</b>		<b>2,235,650</b>	<b>0.5</b>
Opening balance	500,000		
(add) Current year profit	1,735,650		
<b>Current Liabilities</b>		<b>3,476,000</b>	
Deposit from Shahrukh Ltd.	75,000		<b>0.5</b>
[2,10,000 (Less) 1,35,000]			
Deposit from Amitabh Ltd.	500,000		<b>0.5</b>
Trade Payables	2,901,000		<b>0.5</b>
<b>TOTAL OF LIABILITIES</b>		<b>10,711,650</b>	

(Total: 6 marks)

**Question 13**

- a) Define the following
- Companies limited by guarantee
  - Close company
  - Sleeping partner (dormant partner)

[1 mark \* 3 = 3 marks]

- b) Sachin Limited has provided you the following statement of financial position as on 31<sup>st</sup> March 2012.

Particulars	Amount (Rs.)	Amount (Rs.)
Non Current Assets		2,200
Investments		100
<u>Current Assets</u>		1,710
Trade receivables	1300	

Inventory	400	
Cash and bank balance	10	
<b>TOTAL OF ASSETS</b>		<b>4,010</b>
Share capital		650
Reserves and surplus		610
Long term loans		250
Current liabilities		2500
<b>TOTAL OF LIABILITIES</b>		<b>4,010</b>

The Managing Director of the company is extremely concerned about the low cash balance inspite of the fact that the company has made record profits during the past year. Sachin Limited has undergone massive growth in the last few years. He has sought your expert advice on the following matters:

- i) What could be the potential reasons for the cash shortage? What other problems do you consider might exist? (3)
- ii) How could the situation be corrected and avoided in the future? (4)

**[TOTAL 10 Marks]**

**Answer 13 a)**

- i) Company limited by guarantee: It is a company where each member's liability is limited to the amount they have guaranteed. For this type of company limitation of liability takes the form of a guarantee from its members to pay a nominal sum in the event of the company being wound up. It is used primarily for non-profit organisations that require legal personality. (1)
- ii) A close company is a company that is controlled by five or fewer participators. It can either be a private or a public limited company. (1)
- iii) A partner in a partnership firm who only provides capital but doesn't take part in the day to day operations of the firm is called a sleeping/dormant partner. Generally the dormant partner's association with the enterprise is not public knowledge (i.e. lenders may not

know that the person is a partner in the firm and hence may leave without anyone noticing).

(1)

**Answer 13 b) i)**

The following could be the potential reasons for the shortage:

- Since the company has been growing rapidly in the past few years, the company might have purchased new machinery and other equipment by spending significant sums of money in order to expand their production capacity. Although this will be helpful in the long run, it would lead to a temporary cash shortage.
- **Trade Receivables**: The size of trade receivables appears too large in proportion to the total balance sheet size. This may be either due to ineffective debt recovery policy or due to competitive pressure (i.e. competitors offering greater credit period and hence the company was required to follow a similar policy in order to maintain clientele). It could also be because of the massive growth in sales and the figure may be in line with previous proportions.
- **Investments**: Although the exact nature of investments are not known, given the current cash shortage, such activities may put further strain on an already critical condition. However if this investment involves a strategic move to acquire a supplier or a customer in order to achieve backward or forward integration, then it may be worth the effort in the long run.
- **Possibility of fraudulent reporting**: The accounts of the company and the financial statements for the last few years should be investigated to see if the financial statements have not been doctored to report false profits.

**[Maximum 2 marks with ½ mark for each valid point with sufficient explanation]**

Other causes of concern:

- The long term sources of finance (equity capital, reserves and long term loan) total to only Rs.15,10,000 while the investment in non-current assets is Rs.22,00,000. This means short term sources (current liabilities) finance nearly one third of the long term investment. This could cause a problem if the trade payables were to ask for immediate settlement of their dues.
- The current ratio is 0.684  $[(1300+400+10)/2500]$  which might be considered too low. However the current ratio of other companies in the same industry should be analyzed to see if this is in line with others.

- The cash balance of Rs.10,000 is extremely low for a company of this magnitude. This means that the company may barely survive for 2-3 days if all cash inflows were to cease for some reason. In an extreme situation, if any of the suppliers (trade payables) were to ask for payment in such a situation, the company may even have to file for insolvency inspite of the operations being extremely profitable.

**[Maximum 1 mark with ½ mark for each valid point]**

{Markers may give credit for any other valid point with reasonable explanation.}

**Answer 13 b) ii)**

The following are potential ways out for the company:

- The company should have taken an additional long term loan by mortgaging non-current assets or raised additional capital through a public issue or a right issue to finance the huge investment in non-current assets.
- If the investments are non-strategic, they could be sold to ensure some breathing space for the company.
- The company could take either of the following courses to deal with a large amount of trade receivables:
  - Offer small cash discounts to customers for immediate payment on sale. Although this will reduce profitability to some extent, atleast the cash crisis could be resolved.
  - Use factoring to raise money from the amount lying blocked in trade receivables.
  - Re-negotiate credit terms with customers wherein a lesser credit period is offered in lieu of competitive prices for goods
- The company may enter into forward agreements with large and old customers to advance some money for goods to be delivered in the next year. The price at which the goods would be supplied would be agreed at the outset in such cases. However if the prices of goods are expected to increase significantly during the next year or the goods may be in shortage, this option may prove risky and loss making.
- The company may acquire new machinery using either hire purchase or operating/financial lease facility. This will ensure that the company doesn't have to bear the entire purchase cost at the outset.
- The company could ask its credit customers (trade receivables) to write them bills of exchange which Sachin Limited could discount with its bankers and raise immediate cash. However if these customers were to dishonour the Bill at maturity, the bank would seek recovery of the amount from the company.

**[ ½ mark for each valid point- Maximum 4 marks]**

**Q14 (a).** The MIT (educational institute) has residence strength of 786 students. In addition to other basic amenities, MIT provides hot water during the 3 months in winter. It has two boilers which operate alternatively in the morning and evening and uses Kerosene oil as fuel.

The operational duration of one boiler in the morning is 3 hours and 2 hours in the evening in November and January. Due to the winter vacation in December operational duration of the boilers is 1.5 hours in the morning and evening. Fuel consumption per hour is 10 liters @ Rs. 15 per liter.

One worker operates the boiler in mornings and evenings. The daily labour cost is Rs. 100. A maintenance cost is Rs. 4000.

To promote green energy the MIT wishes to setup solar heaters instead of conventional heaters.

The operating parameters of the green proposal are estimated as:

1. Solar heaters required :10@ Rs. 15000 each
2. Per heater installation cost: Rs. 2000
3. Annual maintenance cost: Rs. 3000
4. Salvage costs of both existing boilers: Rs. 3000
5. Useful life 10 year with zero salvage value

MIT purchases the fuel on the first day of the season. The option is considered in November month.

(a) Evaluate the financial viability of green proposal @ 12% RDR. You should make appropriate and rational assumptions if necessary. [16 marks]

(b) Explain the non-financial considerations involved in making the decision [4 marks]

**Ans 14 (1).**

<i>Financial analysis related to replacement of existing boilers</i>	Marks
Incremental cash flows:	
Cost of solar heaters	150,000
installation cost	20,000
Less Salvage value of existing boilers	<u>3,000</u>
	<u>167,000</u>
	<b>2</b>
<hr/>	
<i>Incremental Cash flows and NPV</i>	
Saving in fuel	59,700
Saving in labour	9,200
Saving in maintenance cost	<b>1</b>

	<u>1,000</u>	
Total saving	69,900	
10 year annuity factor	6.33	<b>1</b>
Total PV	442,345	<b>1</b>
Less cash out flows	167,000	
NPV	275,345	<b>2</b>
<u>Recommendation: Since NPV is positive the proposal is viable</u>		

Working note 1				
	Nov	Dec	Jan	
Use of boiler per day	5	3	5	
Fuel per hour	10	10	10	
Days	30	31	31	
Total fuel used	1,500	930	1,550	
Cost of fuel	15	15	15	
Total cost of fuel	22,500	13,950	23,250	<b>5</b>

Working note 2				
Total No of days	30	31	31	
Labour cost	100	100	100	
Total saving	3,000	3,100	3,100	<b>2</b>

Note 3	
As MIT is educational institute so there is no tax implication	<u>2</u>
	<u><b>16</b></u>

**Ans 14****(II).**

Non-financial considerations

1. In case of low sunlight or zero sunlight what would be the arrangement **1**
2. Space requirement for additional solar heaters **1**

3. Availability of maintenance personal given the new technology	1
4. Temperature of solar heated water adequate	1
Other relevant points	1 each
	<b>Overall max of 4</b>

**Q15 :** CFO Mr. Neeraj Garg of Nandani Enterprise Ltd has been trying to develop a financial plan for the upcoming board meeting. He is in discussion with sales head who has developed the following estimates (in lakh of units).

	Year			
	1	2	3	4
Sales	300	360	450	630
Non-current assets (net)	240	285	330	375

For planning purposes he has also made the following estimates and assumptions:

Cost of goods sold (% of sales)	70
Return on sales (after tax)%	10
Dividend payout ratio%	50
Turnover(times) based on year-end sales values:	
Cash and debtors	4
Inventory	3
Required current ratio	2:1
Required ratio of long term debt to equity	0.5

At the beginning of year 1, the firm is expected to have equity capital of 180 lacs and long term debt of 90 lacs.

Determine how much additional equity capital if any, the company will have to issue each year if the CFO's assumptions are correct.

**[18 Marks]**

**Ans. 15.**

	Year				Marks for all 4 years
	1	2	3	4	
Sales	300	360	450	630	
COGS	210	252	315	441	
Net income	30	36	45	63	1
Dividend paid	15	18	22.5	31.5	1

Retained earning	15	18	22.5	31.5	1
Current assets					
Cash & Debtors	75	90	112.5	157.5	1
Inventory	70	84	105	147	2
Total					
CA	145	174	217.5	304.5	
Fixed assets	240	285	330	375	
Total assets	385	459	547.5	679.5	
CL	72.5	87	108.75	152.25	1
Long term debt	104.17	124	146.25	175.75	2
Equity Capital	208.33	248	292.5	351.5	2
Opening capital	180	208.3	248.0	292.5	1
Retained earning	15	18	22.5	31.5	2
Closing Capital	195	226.3	270.5	324	
Required	208.3	248.0	292.5	351.5	2
New issue	13.3	21.7	22.0	27.5	2

**[18]**

For each year's wrong calculations deduct 1/4 of given respective marks

Alternate Solution: If students used sales instead of COGS they will get full marks and other figures will change accordingly.