# INTERMEDIATE EXAMINATION

## GROUP I

## (SYLLABUS 2012)

## SUGGESTED ANSWERS TO QUESTIONS

## DECEMBER 2015

## Paper-8 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

**Time Allowed : 3 Hours** **Full Marks : 100**

**The figures in the margin on the right side indicate full marks.**

**This paper contains three questions.**

**All questions are compulsory, subject to internal choice as per instruction provided against each question.**

**All workings must from part of your answer.**

**Assumptions if any, must be clearly indicated.**

**I. Answer all sub-divisions:** **2×10=20**

**(a) Under Rowan Plan, calculate the total earnings and effective rate of earnings per hour of three operators X, Y and Z from the following particulars:**

**The actual time taken by three operators are as follows:**

| | |
|---|---|
| X | 90 hours |
| Y | 80 hours |
| Z | 60 hours |

**The standard time fixed for producing 1 dozon articles is 100 hours. The rate of wages is `2 per hour.**

**(b) The average annual consumption of a spare part is 18250 units at a price of ` 36.50 per unit. The storage cost is 20% on an average inventory and the cost of placing an order is ` 50. Find out the quantity required to be purchased at a time.**

**(c) List out the objectives of CAS-4.**

**(d) What are the advantages of Cost-Control?**

**(e) M/S Sky Ltd. furnished you the following details:**

| | |
|---|---|
| Number of employees at the beginning of 2013 | 250 |
| Number of employees at the end of 2013 | 400 |

| | |
|---|---|
| **Employees resigned** | **40** |
| **Employees discharged** | **10** |
| **Employees replaced due to resignation and discharges** | **40** |

**From the above calculate Labour Turnover Rate for the factory by Separation Method and Replacement Method.**

**(f) List out the items to be included for the purpose of measuring employee cost.**

**(g) The following particulars are furnished to you by M/S Limelight & Co. Ltd in respect of a current machine:**

| | |
|---|---|
| **Cost of Machine** | **`30,000** |
| **Estimated scrap value** | **`3,000** |
| **Working life of the machine is** | **5 years** |

**The machine is treated as obsolete after three years of service and sold for `6,000. How would you treat the loss of the transaction in cost Account?**

**(h) The following particulars are furnished to you relating to a company:**

| | **(`) (in lakhs)** |
|---|---|
| **Sales** | **1,000** |
| **Variable cost** | **400** |
| **Fixed cost** | **300** |
| **Contribution** | **600** |
| **Interst** | **100** |
| **Profit before tax** | **200** |

**You are required to calculate Operating leverage and Financial Leverage from the above.**

**(i) What are the advantages of computation of overhead absorption rate before incurrence of overhead?**

**(j) A co. pays a dividend of 20% on the equity shares of face value of `100 each. Find out the value of the equity share given that the dividend rate is expected to remain same and the required rate of return is 15%.**

**Answer:**

**I.** (a) Computation of Earning under Rowan Plan

$$\text{Hours worked} \times \text{Rate Per Hour} + \frac{\text{Time saved}}{\text{Time Allowed}} \times \text{Hours worked} \times \text{Rate Per Hour}$$

| | EARNINGS | EFFECTIVE RATE |
|---|---|---|
| X | (90 × 2) + [100 - 90/100] 90 × 2 = 180 + 18 = 198 | 198/90 = 2.20 |
| Y | (80 × 2) + [100 - 80/50] 80 × 1 = 160 + 32 = 192 | 192/80 = 2.40 |
| Z | (60 × 2) + [100 - 60/50] 60 × 1 = 120 + 48 = 168 | 168/60 = 2.80 |

(b)

$$\text{EOQ} = \sqrt{\frac{2 \times 18,250 \text{ units} \times 50}{36.50 \times 20 / 100}}$$

$$= \sqrt{\frac{18,25,000}{7.3}} = 500\text{units}$$

(c) Objectives of CAS - 4: Cost Accounting standard on cost of production for captive consumption are:

(i) The purpose of this standard is to bring uniformity in the principles and methods used for determining the cost of production of excisable goods used for captive consumption.
(ii) The cost statement prepared based on standard will be used for determination of assessable value of excisable goods used for captive consumption.
(iii) The standard and its disclosure requirement will provide better transparency in the valuation of excisable goods used for captive consumption.

(d) The advantage of cost control are mainly as follows: -

(i) Achieving the expected return on capital employed by maximising or optimising profit.
(ii) Increase in productivity of available resources.
(iii) Reasonable price.
(iv) Continued employment and job opportunity for workers.
(v) Economic use of limited resources of production.
(vi) Increased credit worthiness.
(vii) Prosperity and economic stability of the industry.

(e) (i) Separation method:

$$= \frac{50}{\frac{250 + 400}{2}} \text{ x } 100$$

$$= \frac{50}{325} \text{ x } 100 = 15.38\%$$

(ii) Replacement method:

$$= \frac{40}{\frac{250 + 400}{2}} \text{ x } 100$$

$$= \frac{40}{325} \text{ x } 100 = 12.31\%$$

(f) Items to be included for the purpose of measuring employee cost.

(i) Any payment made to an employee either in cash or kind.
(ii) Gross payments including allowances payable and includes all benefits.
(iii) Bonus, ex-gratia, sharing of surplus, remuneration payable to managerial personnel including Executive Directors and other officers.
(iv) Any amount of amortization arising out of voluntary retirement, retrenchment, termination etc.
(v) Variance in employee payments / costs due to normal reasons (if standard Costing System is followed).
(vi) Any perquisites provided to an employee by the employer.

(g) Cost of machine 30,000

| | |
|---|---|
| Less: Scrap value | 3,000 |
| | 27,000 |

Depreciation per year = 27,000 ÷ 5 = 5,400

**Computation of loss:**

| | |
|---|---|
| Cost of machine | 30,000 |
| Less: Dep for 3 yrs | 16,200 |
| WDV at the end of 3 yrs. | 13,800 |
| Less: Sale value | 6,000 |
| Loss | 7,800 |

Entire loss may be charged to costing profit and loss a/c in the year of sale or may be spread over the balance period of life of the machine.

(h) Calculation of Leverages:

Operating Leverage =

Contribution /EBIT $= \frac{600}{300} = 2$

Finance Leverage = $\frac{300}{200} = 1.5$

(i) Advantages:

- ❖ Production cost can be worked out as soon as production is finished.
- ❖ It enables prompt preparation of cost sheets and cost estimates which help managements submit tenders and quotations and fix selling price of product well in advance.
- ❖ Product costs are not affected by calender or seasonal fluctuations.
- ❖ Cost control is facilitated by comparing actual overheads with overheads recovered.
- ❖ Where cost plus contract formula is applied, price quotations can be fixed readily.
- ❖ It provides data for cost control and decision making.
- ❖ Losses due to idle capacity and real cost of production are highlighted while determining rate by using normal capacity as base.

(j) $P_o = \frac{D}{K_e}$

Where $P_o$ = Value of equity share.

$D$ = Annual Dividend

$K_e$ = Required rate of return.

So, $K_e$ = 15% D = 20 (i. e. 20% of 100)

$P_o = \frac{D}{K_e} = \frac{20}{0.15}$ = ` 133.33

**II. Answer any three sub-divisions from (a) to (d): 16×3=48**

**(a) (i) From the following particulars furnished by M/S Bright & Co. Ltd, prepare a statement indicating the pricing of issues on the basis of Simple Average Method.**

**2014, April**

**April 1 -** **Purchased 200 units @ `20 each.**
**April 2 -** **Purchased 100 units @ `18 each.**
**April 5 -** **Issued 250 units to job P vide M/R No. 10**
**April 7 -** **Purchased 200 units @ ` 16 each**
**April 10 -** **Purchased 300 units @ ` 14 each.**
**April 13 -** **Issued 200 units to job Q vide M/R No. 16**
**April 18 -** **Issued 200 units to job R vide M/R No. 18**
**April 20 -** **Purchased 100 units @ ` 13 each**
**April 24 -** **Issued 150 units to job X vide M/R No. 20.**

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**(ii) Compute the employee cost from the following particulars:**

**Basic pay `3,00,000. Accommodation provided to employees free of cost (this accommodation is owned by the employer, depreciation of the accommodation is `50,000. Maintenance charges `40,000 and municipal tax of the accommodation `2,000.**

**Employer's contribution to PF `60,000. Due to delay in making payment, a penalty was imposed for `3,000, which was paid by the employer.**

**Reimbursement of medical expenses `40,000.**

**Employees contribution to PF `60,000.**

**Bonus paid to employees `1,00,000.**

**Hospitalisation expenses of Employee's family `1,00,000 paid by employer. 8**

**Answer:**

**II. (a)**

**(i) STORES LEDGER ACCOUNT**

| | Receipts | | | Issue | | | Balance | |
|---|---|---|---|---|---|---|---|---|
| **Date** | **Qty.** | **Price (`)** | **Value (`)** | **Qty.** | **Price (`)** | **Value (`)** | **Qty.** | **Value (`)** |
| 2014 | | | | | | | | |
| April - 1 | 200 | 20 | 4,000 | - | - | - | 200 | 4,000 |
| April - 2 | 100 | 18 | 1,800 | - | - | - | 300 | 5,800 |
| April - 5 | - | - | - | 250 | 19 | 4,750 | 50 | 1,050 |
| April- 7 | 200 | 16 | 3,200 | - | - | - | 250 | 4,250 |
| April-10 | 300 | 14 | 4,200 | - | - | - | 550 | 8,450 |
| April-13 | - | - | - | 200 | 16 | 3,200 | 350 | 5,250 |
| April-18 | - | - | - | 200 | 15 | 3,000 | 150 | 2,250 |
| April- 20 | 100 | 13 | 1,300 | - | - | - | 250 | 3,550 |
| April- 24 | - | - | - | 150 | 13.5 | 2025 | 100 | 1,525 |

**Working Notes:**

1. Calculation of price for issue on 5th April, 2014
   = 20 + 18/2 = 19

2. Price for issue on 13th April

   18 + 16 + 14/3 = 16

3. Price for issue on 18th April

   16 + 14/2 = 15

4. Price for issue on 24th April

   14 + 13/2 = 13.5

**(ii) Computation of Employee Cost:**

| | Particulars | Amount (`) |
|---|---|---|
| | Basic pay | 3,00,000 |
| Add: | Cost of accommodation provided by employer = Depreciation + Maintenance Charges & Municipal Tax = 50,000 + 40,000 + 20,000 = 92,000 | 92,000 |
| Add: | Employer's contribution to PF | 60,000 |
| Add: | Reimbursement of medical expenses | 40,000 |
| Add: | Hospitalization expenses | 1,00,000 |
| Add: | Bonus paid to employee | 1,00,000 |
| | Total Employee Cost | 6,92,000 |

**(b) (i) Following particulars are revealed from the costing records of M/S Jupiter & Co. Ltd. in the year 2014:**

**Production - 15,000 units**

| | (`) |
|---|---|
| **Raw material cost** | **3,00,000** |
| **Labour cost** | **1,80,000** |
| **Factory overheads** | **1,20,000** |
| **Office overheads** | **60,000** |
| **Selling expenses** | **15,000** |

**Rate of profit 25% on selling price.**
**Now the management decided to produce 20,000 units in 2015. As per Co's estimate, cost of raw materials will be increased by 25% and labour cost will also increase by 15%. 50% of overhead charges are fixed and the rest is variable. The selling expenses per unit will also be reduced by 25%.**
**There will be no change in rate of profit.**
**Prepare Cost Statements for both the years 2014 and 2015. 3+5=8**

**(ii) Under a scheme of payment by result, a worker takes 8 hours to complete a job. The wages is `24 per hour. Material Cost of the job is `150 and overheads are recovered at 25% of the total direct wages. Standard time allowed for the job 12 hours. You are required to calculate the factory cost of the job under Rowan system and Halsey system of incentive plan. 2+2+4=8**

**Answer:**

**II. (b)**

**(i) Statement of cost & profit (cost sheet)**

**Output 15,000 units for 2014**

| **Particulars** | **Amount (`)** | **Amount (`)** |
|---|---|---|
| Raw materials | 20 | 3,00,000 |
| Labour | 12 | 1,80,000 |
| **Prime Cost** | 32 | 4,80,000 |
| Add: Factory Overhead | 8 | 1,20,000 |
| **Works cost** | 40 | 6,00,000 |
| Add: Office overhead | 4 | 60,000 |
| **Cost of Production** | 44 | 6,60,000 |
| Add: Selling Exp. | 1 | 15,000 |
| **Cost of Sales** | 45 | 6,75,000 |
| Add: Profit 25% on Sales or 33/1/3 % on cost of sales | 15 | 2,25,000 |
| **Sales** | 60 | 9,00,000 |

**Statement of Cost & Profit (cost sheet)**

**Output 20,000 units for 2015**

| **Particulars** | **Cost per Unit (`)** | **Total Cost (`)** |
|---|---|---|
| Raw materials (`20 × 125% × 20,000) | 25 | 5,00,000 |
| Add: Labour (`12 × 115% × 20,000) | 13.80 | 2,76,000 |
| **Prime Cost** | 38.80 | 7,76,000 |
| **Add:** Factory Overheads [$\frac{`1,20,000}{2}$ i.e. `60,000 + $\frac{`60,000}{15,000} \times 20,000$ i.e. `80,000] | 7.00 | 1,40,000 |
| **Works Cost** | 45.80 | 9,16,000 |
| **Add:** Office Overheads [$\frac{`60,000}{2}$ i.e. `30,000 + $\frac{`30,000}{15,000} \times 20,000$ i.e. `40,000] | 3.50 | 70,000 |
| **Cost of Production** | 49.30 | 9,86,000 |
| **Add:** Selling Expenses [{`1 × (100 – 25 )%} × 20,000] | 0.75 | 15,000 |
| **Cost of Sales** | 50.05 | 10,01,000 |
| **Add:** Profit 25% on Sales or 33.33% on Cost of Sales | 16.68 | 3,33,600 |
| **Sales** | **66.73** | **13,34,600** |

**(ii) A: Rowan Plan:**

= Hours worked × Rate per hour + (Time Saved/Time allowed) × Hours worked × Rate per hour

= 8 × 24 + [12 - 8/12] × 8 × 24

= 192 + 1/3 × 192

= 192 + 64

= `256

**B: Halsey Plan:**

= Hours worked × Rate per hour + 50% of Time Saved × Rate per hour

= 8 × 24 + 50% [12 - 8] × 24

= 192 + 48 = `240

**C: Factory Cost:**

| Particulars | Rowan (`) | Halsey Plan (`) |
|---|---|---|
| I. Material cost | 150 | 150 |
| II. Labour cost | 256 | 240 |
| III. Overhead at 25% labour cost | 64 | 60 |
| Total | 470 | 450 |

**(c) (i) What are the main objectives of group bonus system?** **4**

**(ii) Write short notes on:** **4×3=12**

**(a) Responsibility Centre**

**(b) Profit Centre**

**(c) Basis of cost classification as per CAS - 1.**

**Answer:**

**II. (c)**

**(i) Group Bonus system:**

Following are the main objects or Group
Bonus System:

1) Creation of team Spirit
2) Elimination of excessive waste materials and time.
3) Recognition of group efforts.
4) Improving productivity.

**(ii)** (a) **Responsibility centre:**

A responsibility centre in Cost Accounting denotes a segment of a business organisation for the activities of which responsibility is assigned to a specific person. So, a factory may be split into a number of centres and an official is assigned with the responsibility of each centre. All costs relating to the centre are collected and the manager responsible for such a cost centre judged by reference to the activity levels achieved in relation to costs. Even an individual machine may be treated as responsibility centre for cost control and cost reduction.

(b) **Profit Centre:**

Profit centre is a segment of a business that is responsible for all activities involved in the production and sales of products, systems and services. Thus a profit centre encompasses both costs that it incurs and revenue that it generates. Profit centres are created to delegate responsibility to individuals and measure their performance. In the concept of responsibility accounting, profit centres are sometimes also responsible for investment made for the centre. The profit is related to the invested capital. Such a profit centre may also be termed as investment centre.

(c) **The basis of Cost Classification as per CAS – 1, is as follows:**

- ❖ Nature of Expenses
- ❖ Nature of traceability to a cost object

- Function
- Nature of Behavior
- Nature of production or operation process

**(d) (i) M/S Sunlight & Co. Ltd. has three production departments X, Y, Z and two service departments P & Q.**
**The following particulars extracted from the books of the company:**

| | (`) |
|---|---|
| **Indirect Wages** | **2,000** |
| **Rent & Rates** | **5,000** |
| **Depreciation on Machinery** | **10,000** |
| **General lighting** | **500** |
| **Power** | **1,000** |
| **Sundries** | **12,000** |

**The following further details are available:**

| | Total | X | Y | Z | P | Q |
|---|---|---|---|---|---|---|
| **Floor Space (sq .ft)** | **10,000** | **2,000** | **2,500** | **3,000** | **2,000** | **500** |
| **Light points** | **50** | **10** | **15** | **15** | **5** | **5** |
| **Direct wages (`)** | **10,000** | **3,000** | **2,000** | **3,000** | **1,500** | **500** |
| **HP of Machinery** | **100** | **50** | **10** | **30** | **5** | **5** |
| **Value of Machinery (`)** | **2,50,000** | **60,000** | **80,000** | **1,00,000** | **5,000** | **5,000** |

**Apportion the overhead costs to various departments on the most equitable basis. 8**

**(ii) Distinguish between chargeable expenses and overhead expenses. 5**

**(iii) In order to boosting the moral of the employees, certain non-monetory incentives are given by the management. List out some of these incentives. 3**

**Answer:**

**II. (d) (i) Primary Departmental Distribution Summary**

| **Particulars** | **Basis of apportionment** | **Total (`)** | **Production Depts.** | | | **Service Depts.** | |
|---|---|---|---|---|---|---|---|
| | | | **X** | **Y** | **Z** | **P** | **Q** |
| Indirect wages | Direct wages | 2,000 | 600 | 400 | 600 | 300 | 100 |
| Rent & Rates | Floor space | 5,000 | 1,000 | 1,250 | 1,500 | 1,000 | 250 |
| General Lighting | Light points | 500 | 100 | 150 | 150 | 50 | 50 |
| Power | H.P of Machines | 1,000 | 500 | 100 | 300 | 50 | 50 |
| Sundries | Direct wages | 12,000 | 3,600 | 2,400 | 3,600 | 1,800 | 600 |
| Depreciation of Machinery | Value of Machine | 10,000 | 2,400 | 3,200 | 4,000 | 200 | 200 |
| Total | | 30,500 | 8,200 | 7,500 | 10,150 | 3,400 | 1,250 |

**(ii) Differences between chargeable expenses and overheads:**

Chargeable expenses are those expenses which can be directly charged to cost units or cost centres. Overhead expenses are those expenses which cannot be directly charged to any cost units or costs centres and are apportioned or allocated.
The dividing line between chargeable expenses and overhead expense is very thin.
Same item of expenses can be treated either as chargeable item of overhead depending upon the situation. Rent for a service department is chargeable to that department cost. To the production units such rent is treated as an indirect rent is treated as an indirect cost because the total service department cost is apportioned to cost units as indirect cost.

Where a factory is more decentralised more and more expenditure is found as direct.

Basically, we can conclude that chargeable expenses are directly chargeable to the production units whereas overhead expenses include expenses which either cannot be chargeable to any production units or can be charged as direct only upto the department cost.

**(iii) Some of the non- monetory incentives are as follows: -**

(a) Free Education and Training.
(b) Medical benefits.
(c) Subsidized canteen.
(d) Sports and Recreational facilities.
(e) Housing facilities and long service awards.
(f) Job security.
(g) Benevolent Fund and Welfare fund.
(h) Contribution to superannuation benefits.

**III. Answer any two sub-divisions from (a) to (c):**

**(a) (i) Zed plus Co. Ltd. has made a plan for the coming year. It is estimated that the company will employ total assets of ` 10,00,000,50% of the assets will be financed by taking loans from outside as borrowed capital for which the rate of interest will be 10% per annum.**
**The direct cost for the year is estimated at ` 5,00,000 and ` 1,00,000 is estimated towards other operating expenses. The sale price of goods will be 140% of the direct costs. Income Tax rate is estimated to be 50%.**

**You are required to find out the following:**

**(a) Return on assets,**
**(b) Net profit margin,**
**(c) Return on owner's equity,**
**(d) Asset Turnover. 4+4=8**

**(ii) Write short notes on:**
**(a) Inter- Corporate Deposits**
**(b) Venture Capital 4+4=8**

**Answer:**

**III. (a) (i) Income Statement of Zed Plus Co. Ltd.**

| Particulars | Amount (`) |
|---|---|
| Sales: (140% of 5,00,000) | 7,00,000 |
| Less: Direct Costs | 5,00,000 |
| Gross Profit | 2,00,000 |
| Less: Operating Exp. | 1,00,000 |
| Earning before Int. & Tax (EBIT) | 1,00,000 |
| Less: Interest (10% of 5,00,000) | 50,000 |
| Profit before Tax (PBT) | 50,000 |
| Less: Tax @50% | 25,000 |
| Profit after Tax (PAT) | 25,000 |

(a) Return on assets $= \frac{\text{PAT}}{\text{Total Assets}} \times 100$

$= \frac{25,000}{10,00,000} \times 100 = 2.5\%$

(b) Net Profit margin $= \frac{\text{PAT}}{\text{Sales}} \times 100$

$= \frac{25,000}{7,00,000} \times 100 = 3.57\%$

(c) Return on owner's equity $= \frac{\text{PAT}}{\text{Equity}} \times 100$

$= \frac{25,000}{5,00,000} \times 100 = 5\%$

(d) Asset Turnover $= \frac{\text{Sales}}{\text{Total Assets}}$

$= \frac{7,00,000}{10,00,000} = 0.7$ times

**(ii) (a) Inter corporate Deposits (ICDs)**

Sometimes the Commercial organisations borrow funds for a short term period, from other companies which have surplus liquidity for the time being. The ICDs are generally unsecured and are arranged by a financier. The ICDs are very common and popular in practice as these are not marred by the legal hassles. The convenience is the basic virtue of the method of financing. There is no regulation at present in India to regulate those ICDs. Moreover, these are not covered by the Sec. 58 of the companies Act. 1956 as the ICDs are not for long term. The transactions in the ICDs are generally not disclosed as the borrowing under the ICDs implies a liquidity shortage of the borrower. The rate of interest on ICDs varies depending upon the amount involved and the time period. The entire working of ICDs market is based on the personal corrections of the lenders, borrowers and the financiers.

**(b) Venture Capital**

Venture Capital is a form of equity financing especially designed for funding high risk and high reward projects. There is a common perception that venture capital is a means of financing high technology projects. However, venture capital is investment of long term financial mode in:

1. Ventures promoted by technically or professionally qualified but unproven entrepreneurs or
2. Ventures seeking to harness commercially unproven technology or
3. High risk ventures.

The term venture capital represents financial investment in a highly risky project with the objective of earning a high rate of return.

Modes of finance by venture capitalists are Equity, Conditional loan and convertible loans.

**(b) (i) XYZ Co. Ltd. desires to produce a new product at a price of `1,200 per unit, with the expectation of annual sales of 5,000 units. Variable costs amounts to `800 per unit and two months credit facility is to be granted.**

**It is estimated that 10% of customers will be defaulters. Others will pay on due date. Interest rate is 15% p.a. A credit agency has offered the Company a suggestion which it claims can help to identify possible bad debts. The agency for such job will demand `3,00,000 p.a. and will be able to identify 20% of customers as being potential bad debts. If these customers are rejected no actual bad debts will result. Should the Company accept the suggestion of credit agency? 3+5=8**

**(ii) M/S Light & Sound Co. Ltd. has sales of ` 12,00,000, variable cost `9,00,000 and fixed cost is `2,00,000 and debt of `5,00,000 of 10% rate of interest.**

**From the above details find out the operating, financial and combined leverages. If the Co. wants to double its earnings before interest and tax (EBIT). how much of a rise in sales would be needed on a percentage basis? 6+2=8**

**Answer:**

**III. (b) (i) The annual return from the new product if the agency is not engaged.**

| | | **(`)** |
|---|---|---|
| Sales (` 1,200 × 5,000) | ------- | 60,00,000 |
| Less: Bad debts (10%) | ------ | 6,00,000 |
| | | 54,00,000 |
| Variable cost (`800 × 5,000) | 40,00,000 | |
| Interest on investment in debtors (40,00,000 × 15/100 × 2/12) | 1,00,000 | 41,00,000 |
| Net profit | ----- | 13,00,000 |

**Annual return from new products if the credit agency is engaged:**

| | | **(`)** |
|---|---|---|
| Sales (80% of 60,00,000) | ------- | 48,00,000 |
| Bad debts | ------ | - |
| | | 48,00,000 |
| Variable Cost : (800 × 4,000) | 32,00,000 | |

| | | |
|---|---|---|
| Interest on investment in debtors (32,00,000 × 15/100 × 2/12) | 80,000 | 32,80,000 |
| | | 15,20,000 |
| Less: Cost of credit agency | | 3,00,000 |
| Net profit | - | 12,20,000 |

Since the net profits is reduced under the new agency's suggestion, (`13,00,000 - `12,20,0000) the proposal should not be accepted.

**(ii) Statement of Existing Profit:**

| | (`) |
|---|---|
| Sales - | 12,00,000 |
| V. Cost | 9,00,000 |
| Contribution | 3,00,000 |
| Less: Fixed Cost | 2,00,000 |
| EBIT | 1,00,000 |
| Less: Interest @ 10% on `5,00,000 | 50,000 |
| Profit before Tax (PBT) | 50,000 |

Operating leverage $= \frac{\text{Contribution}}{\text{EBIT}} = \frac{3,00,000}{1,00,000} = 3$

Financial leverage $= \frac{\text{EBIT}}{\text{PBT}} = \frac{1,00,000}{50,000} = 2$

Combined leverage 3 × 2 = 6

Statement of sales needed to double the EBIT.

Operating leverage is 3 times i.e. 33/1/3% increase in sales volume causes a 100% increase in operating profit or EBIT. So, at the sales ` 16,00,000, operating profit EBIT will become `2,00,000 i.e. double the existing one.

**(c) (i) M/S Bright Ltd. provides you with the following details:**

| | **Cost per unit (`)** |
|---|---|
| **Raw material** | **60** |
| **Direct labour** | **20** |
| **Overhead** | **30** |
| **Total cost** | **110** |
| **Profit** | **30** |
| **Selling price** | **140** |

**Average raw material remain in stock for one month. Average material in work-in-process is for half month. Credit allowed to customers - one month and credit allowed by suppliers - one month.**

**Average time lag in payment of wages: 10days; average time lag in payment of overheads 30 days. 25% of sales are on cash basis. Cash balance expected to be `50,000. Finished goods lie in the warehouse for one month.**

**You are advised to prepare a statement of working capital to finance a level of activity of 54,000 unit of output p.a. Production is carried on evenly throughout the year and wages and overheads accrue sirmilarly.**

**State your assumptions, if any.** **5+5=10**

(ii) M/S Sun & Moon Co. Ltd. is considering to select one project out of two alternative projects both with life of 5 (Five) years and following particulars are given:

| | | Project X | Project Y |
|---|---|---|---|
| | | (`) | (`) |
| Capital Investment | Year 0 | 2,00,000 | 1,00,000 |
| Income | Year I | 60,000 | 50,000 |
| | Year II | 40,000 | 45,000 |
| | Year III | 40,000 | 30,000 |
| | Year IV | 35,000 | 30,000 |
| | Year V | 40,000 | 20,000 |

The expected rate of return is 14% p.a. The present value of ` 1 at 14% p.a. from year 1 to 5 is as under:

| Year | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Present value factor | 0.88 | 0.77 | 0.68 | 0.59 | 0.52 |

You are required to calculate the comparative profitability of the two projects by using net present value method and advise the management suitably. 6

**Answer:**

**III. (c) (i) Statement of Working capital:**

**I. Current Assets**

| | Amount | Amount |
|---|---|---|
| | (`) | (`) |
| Minimum cash balance | 50,000 | |
| Inventories: | | |
| Raw materials (4500 × 60) | 2,70,000 | |
| Work-in-progress | | |
| Material- 4500 × 60/2 | 1,35,000 | |
| Wages 50% of (4,500 × 20) / 2 | 22,500 | |
| Overheads 50% of (4,500 × 30)/2 | 33,750 | |
| Finished goods (4,500 × 110 | 4,95,000 | |
| Debtors (4500 ×110 × 75%) | 3,71,250 | |
| Gross Working capital | 13,77,500 | 13,77,500 |

**II. Current Liabilities:**

| | Amount | Amount |
|---|---|---|
| | (`) | (`) |
| Creditors for materials (4,500 × 60) | 2,70,000 | |
| Creditors in wages (4,500 × 20) / 3 | 30,000 | |
| Creditors for Overheads (4,500 × 30) | 1,35,000 | |
| | 4,35,000 | 4,35,000 |
| Net working capital - | | 9,42,500 |

**Working Notes:**

(1) In valuation of work-in-progress, raw materials have been taken at full requirements for 15 days but wages and overhead have been taken at 50% on the assumption that on an average all units in work-in-progress are 50% complete.

(2) Annual level of activity is 54,000 units. So, monthly units 54,000 ÷ 12 = 4,500

**(ii) Comparative Profitability's:**

| Year | Investment-X | | | Investment-Y | |
|---|---|---|---|---|---|
| | P/V Factor @14% | Annual Income (`) | P/V (`) | Annual Income | P/V (`) |
| 1 | 0.88 | 60,000 | 52,800 | 50,000 | 44,000 |
| 2 | 0.77 | 40,000 | 30,800 | 45,000 | 34,650 |
| 3 | 0.68 | 40,000 | 27,200 | 30,000 | 20,400 |
| 4 | 0.59 | 35,000 | 20,650 | 30,000 | 17,700 |
| 5 | 0.52 | 40,000 | 20,800 | 20,000 | 10,400 |
| | | | 1,52,250 | | 1,27,150 |
| Less: | Investment | | 2,00,000 | | 1,00,000 |
| | | -Ve | 47,750 | +Ve | 27,150 |

As the NPV is positive in case of Investment 'Y' the project Y may be selected.