

MOCK TEST PAPER – 2
INTERMEDIATE (IPC): GROUP – I
PAPER – 3: COST ACCOUNTING AND FINANCIAL MANAGEMENT
PART – I : COST ACCOUNTING

Suggested Answers/ Hints

1. (a) (i) Minimum stock of A

Re-order level – (Average rate of consumption × Average time required to obtain fresh delivery)

$$= 8,000 - (200 \times 10 \times 2) = 4,000 \text{ kgs.}$$

(ii) Maximum stock of B

Re-order level – (Minimum Consumption × Minimum Re-order period) + Re-order quantity

$$= 4,750 - (4 \times 175 \times 3) + 5,000$$

$$= 9,750 \times 2,100 = 7,650 \text{ kgs.}$$

(iii) Re-order level of C

Maximum re-order period × Maximum Usage

$$= 4 \times 225 \times 6 = 5,400 \text{ kgs.}$$

OR

Re-order level of C

= Minimum stock of C + (Average rate of consumption × Average time required to obtain fresh delivery)

$$= 2,000 + [(200 \times 6) \times 3] \text{ kgs.}$$

$$= 5,600 \text{ kgs.}$$

(iv) Average stock level of A

= Minimum stock level of A + $\frac{1}{2}$ Re-order quantity of A

$$= 4,000 + \frac{1}{2} \times 10,000 = 4,000 + 5,000 = 9,000 \text{ kgs.}$$

OR

Average Stock level of A

$$= \frac{\text{Minimum stock} + \text{Maximum stock}}{2} \quad (\text{Refer to working note})$$

$$= \frac{4,000 + 16,250}{2} = 10,125 \text{ kgs.}$$

Working note

Maximum stock of A = ROL + ROQ – (Minimum consumption × Minimum re-order period)

$$= 8,000 \text{ kgs} + 10,000 - [(175 \times 10) \times 1] = 16,250 \text{ kgs.}$$

(b) Working note:

Let T hours be the total time worked in hours by the skilled worker (machine-man P); ₹ 30/- is the rate per hour; standard time is 4 hours per unit and effective hourly earning rate is ₹ 37.50 then

$$\text{Earning} = \text{Hours worked} \times \text{Rate per hour} + \frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time taken} \times \text{Rate per hour}$$

(Under Rowan incentive plan)

$$₹ 37.5 T = (T \times ₹ 30) + \frac{(4 - T)}{4} \times T \times ₹ 30$$

$$₹ 37.5 = ₹ 30 + (4 - T) \times ₹ 7.5$$

$$\text{Or } ₹ 7.5 T = ₹ 22.5$$

$$\text{Or } T = 3 \text{ hours}$$

Total earnings and effective hourly rate of skilled worker (machine man P) under Halsey Incentive Scheme (50%)

Total earnings = (Hours worked × Rate per hour) + (½ Time saved × Rate per hour)

(under 50% Halsey Incentive Scheme)

$$= (3 \text{ hours} \times ₹ 30) + (\frac{1}{2} \times 1 \text{ hour} \times ₹ 30)$$

$$\text{Effective hourly rate} = \frac{\text{Total earnings}}{\text{Hours taken}} = \frac{₹ 105}{3 \text{ hours}} = ₹ 35/-$$

2.

Computation of Machine Hour Rate

	Basis of apportionment	Total	Machines		
			A	B	C
		(₹)	(₹)	(₹)	(₹)
(A) Standing Charges					
Insurance	Depreciation Basis	8,000	3,000	3,000	2,000
Indirect Labour	Direct Labour	24,000	6,000	9,000	9,000
Building Maintenance expenses	Floor Space	20,000	8,000	8,000	4,000
Rent and Rates	Floor Space	1,20,000	48,000	48,000	24,000
Salary of foreman	Equal	2,40,000	80,000	80,000	80,000
Salary of attendant	Equal	<u>60,000</u>	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>
Total standing charges		<u>4,72,000</u>	<u>1,65,000</u>	<u>1,68,000</u>	<u>1,39,000</u>
Hourly rate for standing charges			<u>84.75</u>	<u>86.29</u>	<u>71.40</u>
(B) Machine Expenses:					
Depreciation	Direct	20,000	7,500	7,500	5,000
Spare parts	Final estimates	13,225	4,600	5,750	2,875
Power	K.W. rating	40,000	15,000	10,000	15,000
Consumable Stores	Direct	<u>8,000</u>	<u>3,000</u>	<u>2,500</u>	<u>2,500</u>

Total Machine expenses	<u>81,225</u>	<u>30,100</u>	<u>25,750</u>	<u>25,375</u>
Hourly Rate for Machine expenses		<u>15.46</u>	<u>13.23</u>	<u>13.03</u>
Total (A + B)	<u>553,225</u>	<u>1,95,100</u>	<u>1,93,750</u>	<u>1,64,375</u>
Machine Hour rate		<u>100.21</u>	<u>99.52</u>	<u>84.43</u>

Working Notes:

- (i) Calculation of effective working hours:

No. of holidays 52 (Sundays) + 12 (other holidays) = 64

Saturday (52 – 2) = 50

No. of days (Work full time) = 365 – 64 – 50 = 251

Hours

Full days work $251 \times 8 = 2,008$

Half days work $50 \times 4 = \underline{200}$

2,208

Hours

Effective capacity 90% of 2,208 1,987 (Rounded off)

Less: Normal loss of time (Breakdown) 2% 40 (Rounded off)

Effective running hour 1,947

- (ii) Amount of spare parts is calculated as under:

	A	B	C
	₹	₹	₹
Preliminary estimates	4,000	4,000	2,000
Add: Increase in price @ 15%	<u>600</u>	<u>600</u>	<u>300</u>
	4,600	4,600	2,300
Add: Increase in consumption @ 25%	<u>—</u>	<u>1,150</u>	<u>575</u>
Estimated cost	<u>4,600</u>	<u>5,750</u>	<u>2,875</u>

- (iii) Amount of Indirect Labour is calculated as under:

	₹
Preliminary estimates	20,000
Add: Increase in wages @ 20%	<u>4,000</u>
	<u>24,000</u>

- (iv) Interest on capital outlay is a financial matter and, therefore it has been excluded from the cost accounts.

3. Work produced by the gang 1,800 standard labour hours, i.e.,

$\frac{1,800}{32+12+6}$ or 36 gang hours		
Standard hours of Skilled Labour	36×32	1,152 hours
Standard hours of Semi-skilled Labour	36×12	432 hours
Standard hours of Un-skilled Labour	36×6	<u>216 hours</u>
Total		<u>1,800 hours</u>
Actual hours of Skilled Labour	40×28	1,120 hours
Actual hours of Semi-skilled Labour	40×18	720 hours
Actual hours of Un-skilled Labour	40×4	<u>160 hours</u>
Total		<u>2,000 hours</u>

Revised Standard hours (actual hours worked expressed in standard ratio)

Skilled Labour	$\frac{1,152}{1,800} \times 2,000$	1,280 hours
Semi-skilled Labour	$\frac{432}{1,800} \times 2,000$	480 hours
Unskilled Labour	$\frac{216}{1,800} \times 2,000$	<u>240 hours</u>
Total		<u>2,000 hours</u>

Standard Cost for Actual Output: (₹)

Skilled Labour	1,152 hours @ ₹ 3	3,456
Semi-skilled Labour	432 hours @ ₹ 2	864
Unskilled Labour	<u>216 hours @ ₹ 1</u>	<u>216</u>
	<u>1,800 hours</u>	<u>4,536</u>

Actual Cost:		
Skilled Labour	1,120 hours @ ₹ 4	4,480
Semi-skilled Labour	720 hours @ ₹ 3	2,160
Unskilled Labour	<u>160 hours @ ₹ 2</u>	<u>320</u>
	<u>2,000 hours</u>	<u>6,960</u>

(i) Total Labour Cost Variance

Standard Cost - Actual Cost	(₹)
₹ 4,536 - ₹ 6,960	2,424 A

(ii) Labour Mix Variance :

(Revised Standard Hours - Actual Hours) × Standard Rate

Skilled	(1,280 - 1,120) × ₹ 3	480 F	
Semi-skilled	(480 - 720) × ₹ 2	480 A	
Un-skilled	(240 - 160) × ₹ 1	<u>80 F</u>	
		<u>80 F</u>	

(iii) Labour Wage rate Variance:

(Standard Rate - Actual Rate) × Actual Hours

Skilled	(₹ 3 - ₹ 4) × 1,120	1,120 A	
Semi-skilled	(₹ 2 - ₹ 3) × 720	720 A	
Un-skilled	(₹ 1 - ₹ 1) × 160	<u>160 A</u>	
		<u>2,000 A</u>	

4.

Process Account

Particulars	Units	Amount	Particulars	Units	Amount
		(₹)			(₹)
To Units introduced	50,000	1,47,000	By Normal loss @ ₹ 1	1,500	1,500
To Direct material		1,38,300	By Abnormal loss*	1,200	6,960
To Direct wages		65,550	By Finished production*	39,300	3,65,490
To Production overhead		<u>74,700</u>	By Closing WIP*	8,000	51,600
	<u>50,000</u>	<u>4,25,550</u>		<u>50,000</u>	<u>4,25,550</u>

Abnormal Loss Account

Particulars	Amount	Particulars	Amount
	(₹)		(₹)
To Process A/c	6,960	By Scrap (1,200 × ₹ 1)	1,200
	<u>6,960</u>	By Profit and Loss A/c	<u>5,760</u>
			<u>6,960</u>

*See working notes.

Working Notes:

This is a peculiar question of normal / abnormal loss involving use of equivalent concept. For valuation of abnormal loss, finished production and WIP, first of all equivalent units for them will have to be found out as under:

Statement showing equivalent units

Particulars	Input Materials			Direct wages		Prod. OH	
		%	Units	%	Units	%	Units
Abnormal loss	1,200	66.67	800	33.33	400	16.67	200
Finished units	39,300	100.00	39,300	100.00	39,300	100.0	39,300
Clg. WIP	<u>8,000</u>	75.00	<u>6,000</u>	50.00	<u>4,000</u>	25.00	<u>2,000</u>
Total	<u>48,500</u>		<u>46,100</u>		<u>43,700</u>		<u>41,500</u>

Statement of Cost per Equivalent unit for each element

Particulars		Cost (₹)	Equivalent Unit (₹)	Cost per unit (₹)
Input material	1,47,000			
Less: Scrap realization	<u>1,500</u>	1,45,500	48,500	3.00
Materials added		1,38,300	46,100	3.00
Direct wages		65,550	43,700	1.50
Production overhead		74,700	41,500	1.80

Statement showing cost of Abnormal Loss, finished production and WIP

Particulars	Cost per unit	Equivalent units	Total cost
Abnormal Loss			
Input	1,200	3.00	3,600
Material added	800	3.00	2,400
Direct wages	400	1.50	600
Production overheads	<u>200</u>	1.80	<u>360</u>
			<u>6,960</u>
Finished Production			
Input	39,300	3.00	1,17,900
Material added	39,300	3.00	1,17,900

Direct wages	39,300	1.50	58,950
Production overheads	<u>39,300</u>	1.80	<u>70,740</u>
			<u>3,65,490</u>
Closing WIP			
Input	8,000	3.00	24,000
Material added	6,000	3.00	18,000
Direct wages	4,000	1.50	6,000
Production overheads	<u>2,000</u>	1.80	<u>3,600</u>
			<u>51,600</u>

5. (a) Essential pre-requisites of Integrated Accounting System:

The essential pre-requisites of integrated accounting system include the following:

- (1) The management's decision about the extent of integration of the two sets of books. Some concerns find it useful to integrate upto the stage of primary cost or factory cost while other prefer full integration of the entire accounting records.
- (2) A suitable coding system must be made available so as to serve the accounting purposes of financial and cost accounts.
- (3) An agreed routine, with regard to the treatment of provision for accruals, prepaid expenses, other adjustment necessary for preparation of interim accounts.
- (4) Perfect coordination should exist between the staff responsible for the financial and cost aspects of the accounts and an efficient processing of accounting documents should be ensured.

Under this system there is no need for a separate cost ledger. Of course, there will be a number of subsidiary ledgers; in addition to the useful Customers Ledger and the Bought Ledger, there will be : (a) Stores Ledger; (b) Stock Ledger and (c) Job Ledger.

(b)

Job Costing	Process Costing
(i) A Job is carried out or a product is produced by specific orders.	The process of producing the product has a continuous flow and the product produced is homogeneous.
(ii) Costs are determined for each job.	Costs are compiled on time basis i.e., for production of a given accounting period for each process or department.

(iii) Each job is separate and independent of other jobs.	Products lose their individual identity as they are manufactured in a continuous flow.
(iv) Each job or order has a number and costs are collected against the same job number.	The unit cost of process is an average cost for the period.
(v) Costs are computed when a job is completed. The cost of a job may be determined by adding all costs against the job.	Costs are calculated at the end of the cost period. The unit cost of a process may be computed by dividing the total cost for the period by the output of the process during that period.
(vi) As production is not continuous and each job may be different, so more managerial attention is required for effective control.	Process of production is usually standardized and is therefore, quite stable. Hence control here is comparatively easier.

6.

Production budget

(For the year 2012-13 by quarters)

(a) Units to be produced in each quarters

Quarters

	I	II	III	IV	Total
2/3 of current quarter's sales demand	8,000	10,000	11,000	12,000	41,000
1/3 of the following quarter demand*	<u>5,000</u>	<u>5,500</u>	<u>6,000</u>	<u>6,500</u>	<u>23,000</u>
	<u>13,000</u>	<u>15,500</u>	<u>17,000</u>	<u>18,500</u>	<u>64,000</u>

(b) Statement showing direct material, variable overhead and fixed overhead

Quarters

	I	II	III	IV	Total
Units to be produced	13,000	15,500	17,000	18,500	64,000
Direct Material @ ₹5 Per unit (Refer to Note 1)	₹ 65,000	₹ 77,500	₹ 85,000	₹ 92,500	₹ 3,20,000

Direct Labour @ ₹ 6 per Unit (Refer to Note 2)	78,000	93,000	1,02,000	1,11,000	3,84,000
Variable overhead ₹1.50 per unit (Refer to Note 3)	19,500	23,250	25,500	27,750	96,000
Fixed Overhead (Refer to Note 4)	<u>45,000</u>	<u>45,000</u>	<u>45,000</u>	<u>45,000</u>	<u>1,80,000</u>
	<u>2,07,500</u>	<u>2,38,750</u>	<u>2,57,500</u>	<u>2,76,250</u>	<u>9,80,000</u>

(ii)	Budgeted profit for the whole year	
	Sales (61,500** units @ ₹ 17 per unit)	₹ 10,45,500
	Less: Total variable cost per unit (61,500** unit @ ₹ 12.50 per unit)	₹ 7,68,705
		2,76,750
	Less: Fixed cost	<u>1,80,000</u>
	Profit for the whole year	<u>96,750</u>
	Variable cost per unit:	(₹)
	Direct material cost (Refer to Note 1)	5.00
	Direct labour cost (Refer to Note 2)	6.00
	Variable cost (Refer to Note 3)	<u>1.50</u>
		<u>12.50</u>

Working Notes:

1. Direct material cost = 10 lbs @ ₹ 0.50 per lb = ₹ 5.00 per unit.
2. Direct labour per unit = 1 hr. 30 minutes @ ₹ 4 per hour = ₹ 6 per unit.
3. Variable overhead per unit = 1 hr. 30 minutes @ ₹ 1 per hour = ₹ 1.50 unit
4. Fixed Overhead

Budgeted production volume is 90,000 direct labour hours for the year @ ₹ 2 per hour i.e.

₹ 1,80,000 for the year. This fixed overhead is spread over the four quarters equally.

* In first three quarters; inventory given for the fourth.

** Sales for the year is given i.e. 12,000+ 15,000+16,500+18,000=61,500 unit.

7. (a) CVP Analysis:-Assumptions

- (i) Changes in the levels of revenues and costs arise only because of changes in the number of products (or service) units produced and sold.
- (ii) Total cost can be separated into two components: Fixed and variable
- (iii) Graphically, the behaviour of total revenues and total cost are linear in relation to output level within a relevant range.
- (iv) Selling price, variable cost per unit and total fixed costs are known and constant.
- (v) All revenues and costs can be added, sub traded and compared without taking into account the time value of money.

- (b)** These contracts provide for the payment by the contractee of the actual cost of manufacture plus a stipulated profit, mutually decided between the two parties.

The main features of these contracts are as follows:

- (1) The practice of cost-plus contracts is adopted in the case of those contracts where the probable cost of the contracts cannot be ascertained in advance with a reasonable accuracy.
- (2) These contracts are preferred when the cost of material and labour is not steady and the contract completion may take number of years.
- (3) The different costs to be included in the execution of the contract are mutually agreed, so that no dispute may arise in future in this respect. Under such type of contracts, contractee is allowed to check or scrutinize the concerned books, documents and accounts.
- (4) Such a contract offers a fair price to the contractee and also a reasonable profit to the contractor.
- (5) The contract price here is ascertained by adding a fixed and mutually pre-decided component of profit to the total cost of the work.

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PART – II : FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/HINTS

1. (i) The Modigliani-Miller theorem states that, in a perfect market, how a firm is financed is irrelevant to its value. In an environment, where there are no taxes, default risk or agency costs, capital structure is irrelevant. The value of a firm is independent of its debt ratio and the cost of capital will remain unchanged as the leverage changes.
- (ii) The finance manager has to manage funds in such a way so as to make optimum utilization and to ensure that their procurement is in a manner so that the risk, cost and control considerations are properly balanced under a given situation. In this context, both procurement and effective utilization of funds is amongst the most crucial tasks which a finance manager performs.

2. (a) (i) **Sales**

Gross profit = ₹ 5,00,000

Rate of Gross profit = 20%

$$\text{Sales} = \frac{\text{₹ } 5,00,000 \times 100}{20} = \text{₹ } 25,00,000$$

(ii) **Sundry debtors**

Sales = ₹ 25,00,000

Debtors velocity = 3 months

$$\text{Year end sales outstanding} = \frac{\text{₹ } 25,00,000 \times 3}{12} = \text{₹ } 6,25,000$$

Less: Bills receivable = ₹ 60,000

Sundry debtors = ₹ 5,65,000

(iii) **Sundry creditors**

Purchases = Sales – Gross profit + Increase in stock

Purchases = ₹ 20,20,000

Creditors velocity = 2 months

$$\text{Year end outstanding for purchases} = \frac{\text{₹ } 20,20,000 \times 2}{12} = \text{₹ } 3,36,667$$

Less: Bills payable = ₹ 36,667

Sundry creditors = ₹ 3,00,000

(iv) Closing stock

Cost of goods sold = ₹ 20,00,000

Stock velocity = 6 months

Average stock = $\frac{₹ 20,00,000 \times 6}{12} = ₹ 10,00,000$

Hence opening stock = ₹ 9,90,000

Closing stock = ₹ 10,10,000

(b) Receivable turnover = $\frac{360}{75} = 4.8$

Profitability of additional sales = ₹ 90,00,000 × 0.2 = ₹ 18,00,000

Additional receivables associated with new sales = $\frac{₹ 90,00,000}{4.8} = ₹ 18,75,000$

Additional investment in receivables associated with new sales ₹ 18,75,000 × 0.8 = ₹ 15,00,000

New level of receivables associated with the original sale = $\frac{₹ 6,00,00,000}{4.8}$
= ₹ 1,25,00,000

Old level of receivables associated with the original sale = $\frac{₹ 6,00,00,000}{8}$
= ₹ 75,00,000

Incremental receivable investment, original sales = ₹ 50,00,000

Total increase in receivable investment = ₹ 15,00,000 + ₹ 50,00,000 = ₹ 65,00,000

Carrying cost of additional investment = 0.20 × ₹ 65,00,000 = ₹ 13,00,000

Comment: As the incremental carrying cost is less than the incremental profitability, Beta Limited should lengthen its credit period from 30 to 60 days.

3. (a). Statement showing Computation of Combined leverage

	₹
Sales	1,00,000
Less: Variable costs (40%)	40,000
Contribution	60,000
Less : Fixed operating costs	30,000

EBIT	30,000
Less : Interest	10,000
Taxable Income (PBT)	20,000

$$\text{Combined leverage} = \frac{C}{PBT} = \frac{60,000}{20,000} = 3$$

The combined leverage of '3' indicates that with every increase of ₹ 1 in sales, the taxable income will increase by ₹ 3 (i.e. 1×3). This can be verified by the following computations when the sales increase by 5%

	₹
Sales	1,05,000
Less : variable costs (40%)	42,000
Contribution	63,000
Less : Fixed operating costs	30,000
EBIT	33,000
Less : Interest	10,000
Taxable Income (PBT)	23,000

It is clear from the above computation that on account of increase in sales by 5%, the profit before tax has increased by 15%.

- (b) The definition of wealth is not straight forward, but one method is to consider the returns that investors expect in exchange of becoming shareholders. Such returns will be in the form of regular dividends and any gain made on the disposal of shares that is, the returns will be either revenue or capital in nature. The maximization of wealth then becomes the maximization of such returns to the share holder. If we introduce the element of time, the objective becomes maximization of dividend flow to the shareholder over time, followed by receiving the gains of disposal.

Since investors have a required return, which is the opportunity cost of investing in a given company rather than investing elsewhere, future cash flows will need to be discounted. If disposal of security is distant, we can ignore it, recognizing that discounted distant returns are less valuable than those to be received in the near future. Maximisation of share holder's wealth then becomes maximization of the present value of the future streams of dividends, and it has been shown in the dividend valuation model, the present value of the future dividends can be equated to the current ex-dividend share price. Maximisation of the company's share price can therefore be used as a surrogate objective.

4. (a) (i) Cover for the preference and the equity dividends

$$= \frac{\text{Profit after tax}}{\text{Preference dividend} + \text{Equity dividend}} = 1.25$$

$$(ii) \text{ Earnings per share} = \frac{\text{Net profit after preference dividend}}{\text{Number of equity shares}} = ₹ 14.29$$

$$(iii) \text{ Price earnings ratio} = \frac{\text{Market price per share}}{\text{Earning per share}} = 14 \text{ times}$$

(iv) Net funds flow

Profit after tax	₹ 15,00,000
Add : Depreciation	<u>₹ 6,00,000</u>
	<u>₹ 21,00,000</u>

(b) Existing current ratio (CR) = ₹ 16 lakh/₹ 8 lakh = 2

The effect of various transactions individually on the CR will be as under:

- (i) The CR will decrease, that is CR = ₹11 lakh/₹ 8 lakh =1.38
- (ii) CR = ₹ 14 lakh/₹ 8 lakh = 1.75 (decrease)
- (iii) CR = ₹ 14 lakh/₹ 6 lakh = 2.33 (increase)
- (iv) Current assets will increase, ₹ 16 lakh + ₹ 5 lakh + ₹ 2 lakh = ₹ 19 lakh.

Current liabilities will increase : ₹ 8 lakh + ₹ 3 lakh = ₹ 11 lakh

CR = ₹ 19 lakh/₹ 11 lakh = 1.73 (decrease)

Total effect on CR :

(a) <i>Current Assets</i>	₹ 16 lakhs
Less: Cash (purchase of machinery)	5
Cash (paid for machinery purchased)	2
Cash (payment of dividend)	2
Cash (paid for inventory purchased)	2
Add: Inventory (purchased)	<u>5</u>
	10
(b) <i>Current liabilities</i> (present)	8
Less: Dividend payable	2
Add: Bank overdraft	<u>3</u>
	<u>9</u>

The current ratio after these changes would be ₹10 lakh/₹ 9 lakh = 1.11