

**BATCH – All Batches**

DATE: 09.08.2017

MAXIMUM MARKS: 100

TIMING: 3 Hours

**PAPER 3 : Cost Accounting****Q. No. 1 is compulsory.****Wherever necessary suitable assumptions should be made by the candidates.****Working notes should form part of the answer.****Answer 1:****(a)**

Standard 1 Unit			Actual 1,000 Units		
Kg	Rate	Amount	Kg	Rate	Amount
5,000	150	750,000	5,100	140	7,14,000

$$\begin{aligned}
 \text{(i) MPV} &= (\text{SR} - \text{AR}) \times \text{AQ} \\
 51,000 &= 10 \times \text{AQ} \\
 \text{AQ} &= 5,100 \text{ Kg} \\
 \text{Actual Qty} &= 5,100 \text{ kg} \\
 \text{Actual Price} &= \frac{7,14,000}{5100} \\
 &= \text{Rs. 140} \quad \longrightarrow \text{(3M)} \\
 \text{(ii) MUV} &= (\text{SQ} - \text{AQ}) \text{ SR} \\
 &= (5,000 - 5,100) \times 150 \\
 &= 15,000 \text{ (A)} \quad \longrightarrow \text{(1M)} \\
 \text{(iii) MCV} &= \text{SC} - \text{AC} \\
 &= 7,50,000 - 7,14,000 \\
 &= 36,000 \text{ (F)} \quad \longrightarrow \text{(1M)}
 \end{aligned}$$

$$\begin{aligned}
 \text{(b) VC p.u.} &= \frac{\text{Change in cost}}{\text{Change in unit}} \\
 &= \frac{45,60,000 - 34,40,000}{1,20,000 - 80,000} \\
 &= 28 \longrightarrow \text{(2M)}
 \end{aligned}$$

Particulars	2011	2012
VC	22,40,000	33,60,000
	(80,000 x 28)	(1,20,000 x 28)
FC (B/F)	12,00,000	12,00,000
Total Cost	34,40,000	45,60,000

$$\begin{aligned}
 \text{Contribution p.u.} &= \text{SP} - \text{VC} \\
 &= 40 - 28 = 12
 \end{aligned}$$

$$\begin{aligned}
 \text{(i) BEP} &= \frac{\text{FC}}{\text{Contribution on P.U}} = \frac{12,00,000}{12} \\
 &= 100,000 \text{ Units} \longrightarrow \text{(2M)}
 \end{aligned}$$

(ii) Profit at 75% Capacity in 2013

Sales 1,50,000 unit @ 40	60,00,000
- VC 1,50,000 units @ 28	42,00,000
Contribution	18,00,000
- FC	12,00,000
Profit	6,00,000 → <b>(1M)</b>

$$\begin{aligned}
 \text{(c) } K_p &= \frac{\text{Annual Dividend} + (\text{RV} - \text{NP})}{\frac{\text{RV} + \text{NP}}{2}} \times 100 \\
 &= \frac{12 + (110 - 103)/10}{\frac{110 + 103}{2}} \times 100 \\
 &= \frac{12.7}{106.5} \times 100 = 11.92\% \rightarrow \textbf{(5M)}
 \end{aligned}$$

$$\text{(d) } \frac{\text{FA}}{\text{Proprietors Fund}} = .75$$

$$\frac{\text{Working Capital}}{\text{Proprietors Fund}} = .25$$

$$\frac{12,00,000}{\text{Proprietors Fund}} = .25$$

$$\text{Proprietor's Fund} = \text{Rs. } 48,00,000 \rightarrow \textbf{(2M)}$$

$$\text{(i) } \frac{\text{FA}}{\text{Proprietors Fund}} = .75 \quad \text{FA} = .75 \times 48 \text{ lac} = \text{Rs. } 36,00,000 \rightarrow \textbf{(1M)}$$

$$\frac{\text{Turnover}}{\text{WC}} = 5 \text{ times}$$

$$\text{Turnover} = 5 \times 12,00,000 = \text{Rs. } 60,00,000$$

$$\text{ROE} = \frac{\text{Earning}}{\text{Proprietor's Fund}}$$

$$15\% = \frac{\text{Earning}}{48,00,000}$$

$$\text{Earning} = 7,20,000$$

$$\text{NP Ratio} = \frac{\text{Profit}}{\text{Sales}} = \frac{7,20,000}{60,00,000} = 12\% \rightarrow \textbf{(2M)}$$

**Answer 2:**

**(a) Cash Flow Statement**

Particulars	(Rs. in lakh)	
	Amount	Amount
<b>Cash Flow from Operating Activities</b>		
Closing Bal of P/L	12.70	
+ Transfer to Other Reserve	3.00	
<u>+/- Non fund Item / Non operational Items</u>		
+ Proposed dividend	6.00	
+ Proposed CDT	1.02	
+ Provision for tax	6.80	
- Profit on sale of P&M	(0.20)	
+ Depreciation on Land & Building	2.00	
+ Depreciation on Plant & Machinery	3.30	
+ Preliminary Exp. Written off	.18	
- Dividend on Investment Received	(.50)	
(-) Opening bal of P/L	(10.30)	
Fund from operation	24	
<u>+/- Changes in Working Capital</u>		
+ Increase in Creditors	1.30	
- Increase in Debtors	(1.90)	
- Increase in stock	(2.30)	
+ Decrease in B/R	.12	
- Income tax paid	(4.80)	16.42 → <b>(3M)</b>
<b>Cash Flow from Investing Activities</b>		
Sale of Plant & Machinery	.50	
Purchase of Plant & Machinery	(12.60)	
Purchase of Investment	(5.00)	
Dividend on Investment	.50	(16.60) → <b>(1M)</b>
<b>Cash Flow from Financing Activities</b>		
Issue of share capital	11.00	
Redemption of Debenture	(2.00)	
Dividend paid	(4.80)	
CDT paid	(0.82)	3.38 → <b>(1M)</b>
Cash flow during the year		3.20
+ Opening balance of cash & cash equivalents		4.50
Closing balance of cash & cash equivalents		7.70

**Working Notes:**

**1. Provision for Taxation A/c → (1M)**

Particulars	Amount	Particulars	Amount
To Cash (B/F)	4.80	By Balance B/D	5.00
To Cal C/d	7.00	By P/L	6.80
	11.80		11.80

**2. Land & Building A/c**

Particulars	Amount	Particulars	Amount
To Bal b/d	27.00	By Depreciation	2.00
		By Bal c/d	25.00
	27.00		27.00

→ (1M)

**3. Plant and Machinery A/c → (1M)**

Particulars	Amount	Particulars	Amount
To Bal b/d	25.00	By Bank	.50
To Bank (B/F)	12.60	By Depreciation	3.30
To P&L	0.20	By Balance c/d	34.00
	37.80		37.80

**(b) Rowan Scheme**

$$\begin{aligned} \text{Wages} &= (\text{Time Taken} \times \text{Time Rate}) + (\text{Time Saved} \times \frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Rate}) \\ &= (5 \times 120) + \left(1 \times \frac{5}{6} \times 120\right) \\ &= 600 + 100 \\ &= \text{Rs. 700} \end{aligned}$$

(i) Effective Hourly Rate =  $\frac{700}{5} = \text{Rs. 140} \rightarrow (2M)$

(ii) Halsey Scheme

$$\begin{aligned} \text{Wage} &= \text{Time Taken} \times \text{Time Rate} + 50\% (\text{Time Saved} \times \text{Time Rate}) \\ \text{Time Taken} \times 140 &= \text{Time Taken} \times 120 + 50\% (6 - \text{Time Taken}) \times 120 \\ \text{Time Taken} \times 20 &= 50\% (6 - \text{Time Taken}) \times 120 \\ \text{Time Taken} \times 20 &= 60 (6 - \text{Time Taken}) \\ \text{Time Taken} &= 3 (6 - \text{Time Taken}) \\ \text{Time Taken} &= 18 - 3 \text{ Time Taken} \\ 4 \text{ Time Taken} &= 18 \\ \text{Time Taken} &= \frac{18}{4} = 4.5 \rightarrow (3M) \end{aligned}$$

**Answer 3:**

**(a) Statement of Equivalent Production → (2M)**

Particulars	Unit	Particulars	Unit	Material		Labour		Overhead	
				%	Unit	%	Unit	%	Unit
Opening WIP	Nil	Normal Loss	900	--	--	--	--	--	--
Unit	45,00	Abnormal	300	100	300	80	240	60	180
		Finished	42,00	100	42,00	100	42,000	100	42,000
		Closing WIP	1,800	100	1,800	50	900	40	720
	45,00		45,00		44,10		43,140		42,900

**Statement of Cost per Equivalent Unit: → (2M)**

Element of Cost	Cos	Eq. Unit	Cost per Eq.
Material	45,000 × 10 + 65,500 - 900 × 5 = 5,11,000	44,100	11.5873

Labour	90,800	43,140	2.1047
Overhead	1,80,700	42,900	4.2121
			17.9041

**Statement of Evaluation → (2M)**

<b>Abnormal</b>	Material	300 x 11.58	=	347.6	
	Labour	240 x 2.10	=	505	
	Overhead	180 x 4.21	=	<u>758</u>	4,740
<b>Finished</b>		42,000 x 17.90			7,51,974
<b>Closing WIP:</b>	Material	1,800 x 11.58	=	20,858	
	Labour	900 x 2.10	=	1,894	
	Overhead	720 x 4.21	=	<u>3,034</u>	25,786

**Process II A/c → (1M)**

Particulars	Unit	Rate	Amount	Particulars	Unit	Rate	Amount
To Process I	45,000	10	4,50,000	By Normal Loss	900	5	4,500
To Material			65,500	By Abnormal	300	15.8	4,740
To Labour			90,800	By FG	42,000	17.91	7,51,974
To Overhead			1,80,700	By Cl. WIP	1,800	14.32	25,786
<b>Total</b>			<b>7,87,00</b>	<b>Total</b>			<b>7,87,000</b>

**Abnormal Loss A/c → (1M)**

Particulars	Unit	Rate	Amount	Particulars	Unit	Rate	Amount
To Process II A/c	300	15.8	4,740	By Bank	300	2	600
				By Costing P/L			4,140
<b>Total</b>			<b>4,740</b>	<b>Total</b>			<b>4,740</b>

(b) PV Ratio =  $\frac{\text{Contribution}}{\text{Sales}}$

25.55% =  $\frac{\text{Contribution}}{42 \text{ Lakh}}$

Contribution = Rs. 10,73,100 → (1M)

**Income Statement → (4M)**

Sales	42,00,000
- VC (B/F)	<u>31,26,900</u>
Contribution	10,73,100
- FC	<u>3,48,000</u>
EBIT	7,25,100
- Interest	<u>2,03,500</u>
EBT	5,21,600
- Tax @ 35%	<u>1,82,560</u>

EAT	3,39,040
÷ No. of Equity Share	<u>2,50,000</u>
EPS	<u>1.35616</u>

(i) Operating Leverage =  $\frac{\text{Contribution}}{\text{EBIT}} = \frac{10,73,100}{7,25,100} = 1.4799 \rightarrow \text{(1M)}$

(ii) Combined Leverage =  $\frac{\text{Contribution}}{\text{EBIT}} = \frac{10,73,100}{5,21,600} = 2.0573 \rightarrow \text{(1M)}$

(iii) EPS = 1.35616  $\rightarrow \text{(1M)}$

**Answer 4:**

(a)

	By Products		
	A	B	
Sales	72,000	90,000	
Less: Profit	14,400	27,000	
Cost of Sales	57,600	63,000	
Less: Selling Expenses	10,800	13,500	
Cost of Production	46,800	49,500	
Less: Cost after separation	35,000	24,000	
Allocation of Joint Cost	11,800	25,500	$\rightarrow \text{(4M)}$

(i) Product rise & overall profitability  $\rightarrow \text{(4M)}$

Particulars	M1	B1	B2	Total
Sales	4,00,000	72,000	90,000	5,62,000
- Selling Exp	<u>80,000</u>	<u>10,800</u>	<u>13,500</u>	<u>1,04,300</u>
Cost of Sales	3,20,000	61,200	76,500	4,57,700
- <b>Production Cost</b>				
Pre-separation	1,75,100	11,800	25,500	2,12,400
Post separation	--	35,000	24,000	59,000
Profit	1,44,900	14,400	27,000	1,86,300

(b)

(i) Statement Showing Computation of Net Operating Cycle Period

	<b>Days</b>
Raw material storage period	55
Work-in-Progress Conversion period	18
Finished goods storage period	22
Average collection period from debtors	45
	140
Less: Average credit period awaited	60
Operating Cycle	80 $\rightarrow \text{(2M)}$

$$(ii) \text{ No. of operating Cycle in a year} = \frac{360}{80} = 4.5 \rightarrow \mathbf{(1M)}$$

$$(iii) \text{ Annual Cash Operating Cost} = 21,00,000 - 2,10,000 = 18,90,000$$

$$\text{Working Capital Requirement} = \frac{18,90,000}{360} \times 80 = \text{Rs. } 4,20,000 \rightarrow \mathbf{(2M)}$$

$$(iv) \text{ Net Operating Cycle Period when Credit sale is discontinued} \\ = 55 + 18 + 22 - 60 = 35$$

$$\text{New Working Capital Requirement} = \frac{18,90,000}{360} \times 35 \\ = \text{Rs. } 1,83,750 \rightarrow \mathbf{(2M)}$$

$$\text{Reduction in Working Capital Requirement} \\ = \text{Rs. } 4,20,000 - \text{Rs. } 1,83,750 \\ = \text{Rs. } 2,36,250 \rightarrow \mathbf{(1M)}$$

**Answer 5:****(a)**

- (i) Per tonne
  - (ii) Per Unit or per Batch or Number
  - (iii) Per Tonne Km or Per Passenger Km
  - (iv) Per Kilowatt hour
- (1 Mark each Point)**

**(b) Cost Allocation:**

It is defined as the process of allotment or identification or assignment of whole items to cost centres or costs units. Thus the charging of direct cost to a cost center or a cost unit is the process of allocation of costs. **(2M)**

**Cost Apportionment:**

It is defined as the process of distributing an item of cost over several cost centres or cost units. In the case of apportionment, one item of cost is charged to two or more cost centres or cost unit. Generally indirect costs (i.e. Overheads) are charged to cost centres or units by way of apportionment in proportion to the anticipated benefits. **(2M)**

**(c) Debt securitization** is a method of recycling of funds. It is thus a process of transforming the assets of a lending institution into negotiable instrument for generation of funds. **(1M)**

**Advantage of debt securitization:**

- (i) It converts the debt into securities.
  - (ii) It converts the illiquid asset into liquid ones.
  - (iii) It opens up new investment avenues.
- (1 Mark each Point)**

**(d) Factoring:** Factoring is a new concept in financing of accounts receivable. This refers to outright sale of accounts receivables to a factor or a financial agency. A factor is a firm that acquires the receivables of other firms. The factoring agency bears the right of collection and services the accounts for a fee. Factoring is an arrangement of managing credit receivable. Factor is a person who makes collection of credit invoices & charges commission for it. This commission is generally paid upfront (in advance). Factor also provides loan to the extent of 85% to 90% of the amount of credit invoice, holding 10% to 15% as reserve. On this loan interest is paid in arrear (at the end of the period of loan). If it is given in the question that interest is collected upfront we will do accordingly. **(2M)**

**Factoring are of two types:**

1. Recourse factoring: In this type of factoring bad debt is not borne by factor.
2. Non- Recourse factoring: Bad Debt is borne by factor.

**Bills Discounting:**

The company which sells goods on credit, will normally draw a bill on the buyer who will accept it and sends it to the seller of goods. The seller, in turn discounts the bill with his banker (2M)

**Answer 6:**

**(a) Expense Budget**

	Particulars	15,000 Unit	18,000 Unit
	Direct Material	7,50,000 (15,000 x 50)	9,00,000 (18,000 x 50)
	Direct Labour	3,00,000 (15,000 x 20)	3,60,000 (18,000 x 20)
(1M) ←	Variable Overhead	2,25,000 (15,000 x 15)	2,70,000 (18,000 x 15)
(1M) ←	Direct Expenses	90,000 (15,000 x 6)	1,08,000 (18,000 x 6)
(1M) ←	Selling Expenses Fixed	60,000 (20,000 x 3)	60,000 (20,000 x 3)
(1M) ←	Selling Expenses Variable	1,80,000 (15,000 x 12)	2,16,000 (18,000 x 12)
(1M) ←	Factory Expenses Fixed	1,40,000 (20,000 x 7)	1,40,000 (20,000 x 7)
(1M) ←	Administration Expenses Fixed	80,000 (20,000 x 4)	80,000 (20,000 x 4)
(1M) ←	Distribution Expenses Fixed	36,000 (20,000 x 1.8)	36,000 (20,000 x 1.8)
(1M) ←	Distribution Expenses Variable	1,53,000 (15,000 x 10.20)	1,83,600 (18,000 x 10.20)
	<b>Total Expenses</b>	<b>20,14,000</b>	<b>23,53,600</b>

**(b)**

Particulars	M-I	M-II	
Profit before depreciation & Tax	6,25,000	8,75,000	
Depreciation	3,00,000 (15 lac /5)	4,00,000 (20 lac /5)	
Profit before tax	3,25,000	4,75,000	
Tax @ 30%	97,500	1,42,500	
Profit after tax	2,27,500	3,32,500	
+ Depreciation	3,00,000	4,00,000	
<b>Annual Cash Inflow</b>	<b>5,27,500</b>	<b>7,32,500</b>	→ (4M)

**Machine I:**

Year	Inflow	Pvf @ 12%	PV	Cumm. PV	
1	5,27,500	.893	4,71,058	4,71,058	(0.5M)
2	5,27,500	.797	4,20,417	8,91,475	
3	5,27,500	.712	3,75,580	12,67,055	
4	5,27,500	.636	3,35,490	16,02,545	
5	5,27,500	.567	2,99,092	19,01,637	
			<u>19,01,637</u>		



$$\begin{aligned} \text{(i) Discounted Payable Period} &= 3 \text{ year} + \frac{2,32,945}{3,35,490} \\ &= 3.69 \text{ Year} \rightarrow \mathbf{(0.5M)} \end{aligned}$$

$$\begin{aligned} \text{(ii) NPV} &= \text{PV of inflow} - \text{PV of Outflow} \\ &= 19,01,637 - 15,00,000 \\ &= 4,01,637 \rightarrow \mathbf{(0.5M)} \end{aligned}$$

$$\text{(iii) PI} = \frac{\text{PV of Inflow}}{\text{PV of Outflow}} = \frac{19,01,637}{15,00,000} = 1.27 \rightarrow \mathbf{(0.5M)}$$

**Machine II:**

Year	Inflow	Pvf @ 12%	PV	Cumm. PV
1	7,32,500	.893	6,54,123	6,54,123
2	7,32,500	.797	5,83,802	12,37,925
3	7,32,500	.712	5,21,540	17,59,465
4	7,32,500	.636	4,65,870	22,25,335
5	7,32,500	.567	<u>4,15,327</u>	26,40,662
			<u>26,40,662</u>	

**(0.5M)**

$$\begin{aligned} \text{(i) Discounted Payable Period} &= 3 \text{ year} + \frac{2,40,535}{4,65,870} \\ &= 3.52 \text{ Year} \rightarrow \mathbf{(0.5M)} \end{aligned}$$

$$\begin{aligned} \text{(ii) NPV} &= \text{PV of inflow} - \text{PV of Outflow} \\ &= 26,40,662 - 20,00,000 \\ &= 6,40,662 \rightarrow \mathbf{(0.5M)} \end{aligned}$$

$$\text{(iii) PI} = \frac{\text{PV of Inflow}}{\text{PV of Outflow}} = \frac{26,40,662}{20,00,000} = 1.32 \rightarrow \mathbf{(0.5M)}$$

**Answer 7:**

**(a)** Perpetual inventory system is the recording as they occur of receipts, issues and the resulting balances of individual items of stock in either quantity or quantity and value. Under this system, a continuous record of receipt and issue of materials is maintained by the Stores Department and the information about the stock of material is always available. In this method, stock records are maintained in such a way as to make an entry in the records, the physical movement of stock, on receipts and issues of materials and to indicate the balance of each item of material in the stores at any point of time. In this system, the entries are made in bin cards and stores ledger as and when the receipts and issues of materials take place and ascertaining the balance after every receipt or issue of materials. The stocks as per the dual records namely bin card and stores ledger are reconciled on a continuous basis. **(4M)**

However, in Continuous stock taking is the process of counting and valuing selected items at different times on a rotating basis. Under this system, physical stock verification is made for each item of stock on continuous basis. It is a physical checking of the stock records with actual stocks on continuous basis. It is a method of verification of physical stock on a continuous basis instead of at the end of the accounting period. It is a verification conducted round the year, thus covering each item of store twice or thrice. Valuable items are checked more frequently than The stocks with lesser value.

Thus we can say that efficacy of the system depends on continuous stock taking.

**(b)** Integrated accounting system refers to the interlocking of the financial and cost accounting systems to ensure all relevant expenditure is absorbed into the cost accounts. Under this accounting system transactions are classified both according to their function and nature.

Under integrated accounting system, both Financial and Cost Accounting records are maintained in one set of books to meet the requirements of Financial Accounting and Cost Accounting purposes.

In this system only one set of accounts are maintained and there will be single profit figure. The necessity of preparation of reconciliation statement does not arise.

**(4M)**

**(c)** Operating Risk is due to the presence of Fixed Operating cost in total cost structure of an equity. If there is no fixed cost there would be no operating risk.

$$\text{Operating Risk} = \frac{\text{Contribution}}{\text{EBIT}}$$

(Operating Leverage)

If fixed cost is Zero

Operating Leverage = 1, means no operating risk

Financial Risk is due to the presence of debt & Preference share in capital structure of an entity. If there is no capital of fixed cost commitment, there would be no financial risk

$$\text{Financial Risk} = \frac{\text{EBIT}}{\text{EBT}}$$

(Financial Leverage)

If debt is zero

Financial Leverage = 1, means no financial risk

**(4M)**

**(d)** Venture capital refers to financial investment in a highly risky project with the objective of earning a high rate of return. Thus venture capital financing means financing of high risk projects promoted by new, inexperienced entrepreneurs who have excellent business ideas, but does not have a financial backing.

Features of Venture Capital financing:

(i) Equity participation by the venture capitalist.

(ii) It is a long term financing for a period between 5 to 10 years.

(iii) The venture capitalist not only invest but also participate in the management of the venture capital undertaking.

Factors that a venture capitalist should consider before financing any risky project are as follows:

- 1. Level of expertise of company's management:** Most of venture capitalist believes that the success of a new project is highly dependent on the quality of its management team.  
They expect that entrepreneur should have a skilled team of managers. Managements also be required to show a high level of commitments to the project.
  - 2. Level of expertise in production:** Venture capital should ensure that entrepreneur and his team should have necessary technical ability to be able to develop and produce new product / service.
  - 3. Nature of new product / service:** The venture capitalist should consider whether the Development and production of new product / service should be technically feasible. They should employ experts in their respective fields to examine idea proposed by the entrepreneur.
  - 4. Future prospects:** Since the degree of risk involved in investing in the company is quite fairly High, venture capitalists should seek to ensure that the prospects for future profits compensate for the risk. Therefore, they should see a detailed business plan setting out the future business strategy.
  - 5. Competition:** The venture capitalist should seek assurance that there is actually a market for a new product. Further venture capitalists should see the research carried on by the entrepreneur.
- (1 Mark for each point)
- (e) With the growth in use of computers, banks are now providing electronic fund transfer and electronic clearing transfer securities. Dividends payments by companies, refunds of subscription money in case of OPOs and refund of tax by Income-tax Dept. are now being made through electronic clearing facility where in the funds are transferred from one account to another within a few moments across India. In such transfers, there is no float as such. Business houses are also using these faculties and payments and receipts are effected through electronic clearing system. If it is so, then the question of float management does not arise. Even where the cheques are being used for payment, float period is reducing because of greater efficiency on the part of the banking system.
- (4M)

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