

BATCH : LI -1, 2, 3, 4, 5, 6, 7 & 8

DATE: 30.09.2016

MAXIMUM MARKS: 100

TIMING: 3 Hours

PAPER – 3 : COST ACCOUNTING AND FINANCIAL MANAGEMENT**Question No. 1 is Compulsory****Answer any five questions from the remaining six questions.****Wherever necessary, suitable assumptions should be made by the candidates.****Answersheet****Answer 1:****(a)****Statement Showing the Cost of the By-Product**

	Rs.
Cost of Material	18750
$(5000 \times \text{Rs. } 23.75) \times \frac{750}{4750}$	
Other Charges (except power)	1500
$\left(\text{Rs. } 14250 \times 66\frac{2}{3}\% \right) \times \frac{750}{4750}$	
Power	2250
$\left(\text{Rs. } 14250 \times 33\frac{1}{3}\% \right) \times \frac{9}{19}$	
Total Cost	22500

Working Note:**Yield per 5000 input units**

	Yield in Percentage	Yield in Percentage
Main product	80%	4000
By product	15%	750
Process loss	5%	250

(5 Marks)**(b)**

Actual production of P	=	250 units
Standard quantity of A for actual production = 2 x 250	=	500 kg. (SQ)
Actual quantity of A for actual production = 1.8 x 250	=	450 kg. (AQ)
Standard price/kg. of A	=	6 Rs. (SP)
Actual price/kg. of A	=	8 kg. (AP)

- (1) Total Material Cost Variance = (Standard Price x Standard Quantity) – (Actual Price x Actual Quantity)
= (6 x 500) – (8 x 450)
= 3000 – 3600 = 600 (A)
- (2) Material Price Variance = (Standard Price – Actual price) x Actual quantity
= (6 – 8) x 450 = 900 (A)
- (3) Material Usage Variance = (Standard quantity – Actual quantity) x Standard price
= (500 – 450) x 6 = 300 (F)

(5 Marks)

(c)

Computation of Rate of Interest and Revised Maturity Value

Principal =RS. 10,000

Amount =RS. 12,625

$$10,000 = \frac{12,625}{(1+i)^4}$$

$P_n = A \times (PVF_{n,i})$

10,000 =12,625 (PVF_{4,i})

0.7921 = (PVF_{4,i})

According to the Table on Present Value Factor (PVF_{4,i}) of a lump sum of Re. 1, a PVF of 0.7921 for half year at interest (i) = 6 percent, Therefore, the annual interest rate is 2 × 0.06= 12 percent.

i=6% for half year

i=12% for full year.

Therefore, Rate of Interest =12% per annum

$$=10,000 \left(1 + \frac{12}{100} \times \frac{1}{4} \right)$$

$$\begin{aligned} \text{Revised Maturity Value} &= 10,000 \left(1 + \frac{3}{100} \right)^8 \\ &= 10,000(1.03)^8 \\ &= 10,000 \times 1.267 \text{ [Considering (CVF}_{8,3}) = 1.267] \end{aligned}$$

Revised Maturity Value =12,670.

(d)

Working Notes:

1. Gross Profit at 20% is:		Rs. 60,000	
Sales		<u>(Rs.60,000 x 100)</u>	
		20	RS. 3,00,000
Cost of Sales:	(Rs. 3,00,000 - Rs. 60,000)		Rs. 2,40,000
2. Stock Velocity: 6			
Average stock:	Rs. <u>2,40,000</u>		Rs. 40,000
	6		

Let, Opening stock = x

Therefore, Closing stock = x + Rs. 5,000

$$\frac{x + (x + \text{Rs. } 5,000)}{2} = \text{Rs. } 40,000$$

$$2x + 5,000 = \text{Rs. } 40,000 \times 2$$

(5 Marks)

Answer 2:

(a)

Memorandum reconciliation account

Dr.	Rs.		Cr.
To Net Loss as per Costing books	347000	By Administration overheads recovered in cost accounts	60000
To Factory overheads under-Absorbed in Cost Accounts	40000	By Interest on investment not included in Cost Accounts	96000
To Depreciation under charged in Cost Accounts	50000	By Transfer fees in Financial books	24000
To Income-Tax not provided in Cost Accounts	54000	By Stores adjustment (Credit in Financial books)	14000
To Interest on Loan Funds in Financial Accounts	245000	By Dividend received in	32000
		By Net loss as per Financial books	510000
	736000		736000

(8 Marks)

(b)

(i) **Weighted Average Cost of Capital of the Company**
(Based on Existing Capital Structure)

	After tax cost	Weights (Refer to W.N. 4)	Weighted cost
	(a)	(b)	(a)×(b)
Equity share capital cost (as per working note 1)	0.15	0.50	0.075
Cost of preference share capital @11.5% (as per working note 2)	0.115	0.125	0.014375
Cost of debentures (as per working note 3)	0.065	0.375	0.02437
Weighted average cost of capital			11.375%

Working Notes :

1. **Cost of equity capital:**

$$K_e = \frac{\text{Dividend}}{\text{Current market price of share}} + g$$

$$= \frac{\text{Rs. 2}}{\text{Rs. 20}} + 5\% = 15\% \text{ or } 0.15$$

2. **Cost of preference share capital :**

$$= \frac{\text{Annual preference share dividend}}{\text{Net proceeds in the issue of preference share}}$$

$$= \frac{\text{Rs. 1,15,000}}{\text{Rs. 10,00,000}} = 0.115$$

3. Cost of Debentures :

$$= \frac{1}{\text{Net proceeds}} (\text{Interest} - \text{Tax})$$

$$= \frac{1}{\text{Rs. } 30,00,000} (\text{Rs. } 3,00,000 - \text{Rs. } 1,05,000)$$

$$= 0.065$$

4. Weights of equity share capital, preference share capital and debentures in total investment of Rs. 80,00,000 :

$$\text{Weight of equity share capital} = \frac{\text{Total equity share capital}}{\text{Total investments}}$$

$$= \frac{\text{Rs. } 40,00,000}{\text{Rs. } 80,00,000} = 0.50$$

$$\text{Weight of preference share capital} = \frac{\text{Total preference share amount}}{\text{Total investments}}$$

$$= \frac{\text{Rs. } 10,00,000}{\text{Rs. } 80,00,000} = 0.125$$

$$\text{Weight of debentures} = \frac{\text{Total debentures}}{\text{Total investments}}$$

$$= \frac{\text{Rs. } 30,00,000}{\text{Rs. } 80,00,000} = 0.375$$

(ii) **New Weighted Average Cost of Capital of the company**
(Based on new capital structure)

	<i>After tax cost</i>	<i>Weights (as per work note 4)</i>	<i>Weighted cost</i>
	<i>(a)</i>	<i>(b)</i>	<i>(a)×(b)</i>
Cost of equity share capital (as per working note 2)	0.20	0.40	0.080
Cost of preference share	0.115	0.10	0.0115
Cost of debentures @ 10%	0.065	0.30	0.0195
Cost of debentures @12%	0.078	0.20	0.0156
Weighted average cost of capital			<u>0.1266</u> or 12.66%

Working notes:

(1) Weights of equity share capital, preference share and debentures in total investment of Rs. 100,00,000

$$\text{Weight of equity share capital} = \frac{\text{Rs. } 40,00,000}{\text{Rs. } 100,00,000} = 0.4$$

$$\text{Weight of preference share capital} = \frac{\text{Rs. } 10,00,000}{\text{Rs. } 100,00,000} = 0.1$$

$$\text{Weight of debentures @10\%} = \frac{\text{Rs. } 30,00,000}{\text{Rs. } 100,00,000} = 0.30$$

$$\text{Weight of debentures @12\%} = \frac{\text{Rs. } 20,00,000}{\text{Rs. } 100,00,000} = 0.20$$

2. Cost of equity capital :

$$K_e = \frac{\text{Dividend}}{\text{Current market price of share}} + g$$

$$= \frac{\text{Rs. 2.40}}{\text{Rs. 16}} + 5\% = 20\%$$

(iii) **Comment :** In the computation of weighted average cost of capital weights are preferred to book value. For example, weights representing the capital structure under a corporate financing situation, its cash flows are preferred to earnings and market. Balance sheet is preferred to book value balance sheet.

(8 Marks)

Answer 3:

(a) (a) Statement Showing Cost Elements Equivalent Units of Performance and the Actual Cost per Equivalent Unit

Detail of Returns	Detail of Input Units	Details	Equivalent Units				
			Output Units	Labour		Overheads	
				Units	Units	%	Units
Returns in Process at Start	200	Returns Completed in March	900	900	100	900	100
Returns Started in March	825	Returns in Process at the end of March	125	100	80	100	80
	1,025		1,025	1,000		1,000	

Costs:	(₹)	(₹)
From previous month	12,000	5,000
During the month	1,78,000	90,000
Total Cost	1,90,000	95,000
Cost per Equivalent Unit	190.00	95.00

(b) Actual cost of returns in process on March 31:

	Numbers	Stage of Completion	Rate per Return (₹)	Total (₹)
Labour	125 returns	0.80	190.00	19,000
Overhead	125 returns	0.80	95.00	9,500
				28,500

(c) Standard Cost per Return:

Labour 5 Hrs × Rs. 40 per hour = Rs. 200
 Overhead 5 Hrs × Rs. 20 per hour = Rs. 100
 Rs. 300

Budgeted volume for March = Rs. 98,000 / 1000 = 980 Returns

Actual labour rate = Rs. 178000 / 4000 = `44.50

(d) Computation of Variances:

Statement Showing Output (March only) Element Wise	Labour	Overhead
Actual performance in March in terms of equivalent units as Calculated above	1,000	1,000
Less: Returns in process at the beginning of March in terms of equivalent units i.e. 25% of returns (200)	50	50
	950	950

Variance Analysis:

Labour Rate Variance

= Actual Time × (Standard Rate – Actual Rate)
 = Standard Rate × Actual Time – Actual Rate × Actual Time
 = Rs. 40 × 4,000 hrs. – Rs. 1,78,000 = Rs. 18,000(A)

Labour Efficiency Variance

= Standard Rate × (Standard Time – Actual Time)
 = Standard Rate × Standard Time – Standard Rate × Actual Time
 = Rs. 40 × (950 units × 5 hrs.) – Rs. 40 × 4,000 hrs.
 = Rs. 30,000(F)

Overhead Expenditure or Budgeted Variance

= Budgeted Overhead – Actual Overhead
 = Rs. 98,000 – Rs. 90,000
 = Rs. 8,000(F)

Overhead Volume Variance

= Recovered/Absorbed Overhead – Budgeted Overhead = 950 Units × 5 hrs. × Rs. 20 – Rs. 98,000 = Rs. 3,000(A)

(8 Marks)

(b) A. Statement showing the Evaluation of Debtors Policies (Total Approach)

Particulars	Present Policy (30 days)	Proposed Policy I (40 days)	Proposed Policy II (60 days)	Proposed Policy III (75 days)
	(Rs.)	(Rs.)	(Rs.)	(Rs.)
A. Expected Profit:				
(a) Credit Sales	4,20,000	4,41,000	4,72,500	4,83,000
(b) Total Cost (other than Bad Debts)				
(i) Variable Costs [Sales xRs. 2/Rs. 3]	2,80,000	2,94,000	3,15,000	3,22,000
(ii) Fixed Costs (W.N.)	35,000	35,000	35,000	35,000

1)				
Total Cost (Variable Cost + Fixed Cost)	3,15,000	3,29,000	3,50,000	3,57,000
(c) Bad Debts	4,200 (1% of 4,20,000)	6,615 (1.5% of 4,41,000)	14,175 (3% of 4,72,500)	19,320 (4% of 4,83,000)
(d) Expected Profit [(a) – (b) – (c)]	1,00,800	1,05,385	1,08,325	1,06,680
B. Opportunity Cost of Investments in Receivables *	5,250 (3,15,000x $\frac{30 \times 20}{360 \times 100}$)	7,311 (3,29,000x $\frac{40 \times 20}{360 \times 100}$)	11,667 (3,50,000x $\frac{60 \times 20}{360 \times 100}$)	14,875 (3,57,000x $\frac{75 \times 20}{360 \times 100}$)
C. Net Benefits (A – B)	95,550	98,074	96,658	91,805

Recommendation: The Proposed Policy I (i.e. increase in collection period by 10 days or total 40 days) should be adopted since the net benefits under this policy are higher as compared to other policies.

Working Note- 1:

(i) **Calculation of Fixed Cost**

$$= [\text{Average Cost per unit} - \text{Variable Cost per unit}] \times \text{No. of Units sold}$$

$$= [(2.25 - 2) \times (\text{Rs. } 4, 20,000/3)] = \text{Rs. } 35,000$$

***Calculation of Opportunity Cost of Average Investments**

$$\text{Opportunity Cost} = \frac{\text{Total Cost} \times \text{Collection period} \times \text{Rate of return}}{360 \text{ days} \times 100}$$

Note 1 : It is assumed that all sales are credit sales only.

Note 2 : This question can also be solved based on incremental approach as well as by computing Expected Rate of Return.

(8 Marks)

Answer 4:

(a)

Statement of Quantity to be produced and sold by M/s Frazer Ltd., during year 2

	Rs.	Rs.
Selling price per kg. (as per working note 1)		200
Variable costs per kg.		
Raw materials	100	
Direct wages (as per working note 2)	45	
Variable factory overhead (as per working note 3)	20	165
Contribution per kg.		35
Less: Profit required per kg. (at 100 kgs of sales)		20
Balance contribution per kg. for meeting fixed costs		15
Total fixed costs (as per working note 4)		2700
Quantity of kgs. Produced & sold (Rs. 2700/15)	180 kgs.	

Working Notes:

1. Selling price per kg. = $\frac{\text{Rs. } 20000}{100 \text{ kg.}} = \text{Rs. } 200/- \text{ per kg.}$

2. Direct wages = $\frac{\text{Rs. } 3000}{100 \text{ kg.}} \times 150\% = \text{Rs. } 45$

3. Variable factory overhead per kg.:

	Rs.
Total factory overhead in year 2	5000
Add: Savings in fixed factory overhead	300
	6000
Less: Total factory overhead in year 1	5000
Increase in factory overhead	1000
Increase in quantity (150 kg. – 100 kg.)	50 kgs.
	<u>Rs. 1000</u>
∴ Variable factory overhead per kg.	50 kg. = Rs. 20/-

4. Fixed factory overhead:

	Year 1 Rs.	Year 2 Rs.
Total factory overhead	5000	5700
Less: Variable factory overhead	2000	3000
Fixed factory overhead	<u>3000</u>	<u>2700</u>

(8 Marks)

(b)

Calculation of Earning per share for three alternatives to finance the project

Particulars	Alternatives		
	I To raise debt of Rs. 2,50,000 and equity of Rs. 22,50,000 Rs.	II To raise debt of Rs. 10,00,000 and equity of Rs. 15,00,000 Rs.	III To raise debt of Rs. 15,00,000 and equity of Rs. 10,00,000 Rs.
Earnings before interest and tax	5,00,000	5,00,000	5,00,000
Less: Interest on debt at the rate of	25,000 <small>(10% on Rs. Rs. 2,50,000)</small>	1,37,500 <small>(10% on Rs. Rs. 2,50,000) (15% on Rs. Rs. 7,50,000)</small>	2,37,500 <small>(10% on Rs. Rs. 2,50,000) (15% on Rs. Rs. 7,50,000) (20% on Rs. Rs. 5,00,000)</small>
Earnings before tax	4,75,000	3,62,500	2,62,500
Less: Tax (@50%)	<u>2,37,500</u>	<u>1,81,250</u>	<u>1,31,250</u>
Earnings after tax: (A)	2,37,500	1,81,250	1,31,250
Number of shares: (B) (as per working note)	15,000	10,000	8,000
Earning per share: (A)/(B)	15,833	18,125	16,406

Decision: The earning per share is higher in alternative II i.e. if the company finance the project by raising debt of Rs. 10,00,000 and issue equity shares of Rs. 15,00,000. Therefore, the company should choose this alternative to finance the project.

Working note:

		Alternatives		
		I	II	III
Equity financing	:(A)	22,50,000	15,00,000	10,00,000
Market price per share	:(B)	150	150	125

Number of equity share	$\frac{A}{B}$	15,000	10,000	8,000
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(8 Marks)

Answer 5 :

(a) Difference between Cost Control and Cost Reduction

Cost Control	Cost Reduction
1. Cost control aims at maintaining the costs in accordance with the established standards.	1. Cost reduction is concerned with reducing costs. It challenges all standards and endeavours to better them continuously.
2. Cost control seeks to attain lowest possible cost under existing conditions.	2. Cost reduction recognises no condition as permanent, since a change will result in lower cost.
3. In case of Cost Control, emphasis is on past and present.	3. In case of cost reduction it is on present and future.
4. Cost Control is a preventive function.	4. Cost reduction is a corrective function. It operates even when an efficient cost control system exists.
5. Cost control ends when targets are achieved.	5. Cost reduction has no visible end.

(b) Treatment of items associated with purchase of material

Sl. No.	Items	Treatment
(i)	Cash discount	Cash discount is not deducted from the purchase price.
(ii)	Subsidy/Grant/Incentives	Any subsidy/ grant/ incentive received from the Government or from other sources deducted from the cost of purchase.
(iii)	VAT or State Sales Tax	State Sales Tax/VAT is paid on intra-state sale and collected from the buyers. It is excluded from the cost of purchase if credit for the same is available. Unless mentioned specifically it should not form part of cost of purchase.
(iv)	Commission or brokerage paid	Commission or brokerage paid is added with the cost of purchase.

(c) Distinguish between Operating Lease and Financial Lease

Point	Operating Lease	Finance Lease
Ownership	The lessee is only provided the use of the asset for a certain time. Risk incident to ownership belongs only to the lessor.	The risk and reward incidental to ownership are passed on to the lessee. The lessor only remains the legal owner of the asset.
Bearing risk	The lessor bears the risk of obsolescence.	The lessee bears the risk of obsolescence.

Purchase option	The lessee does not have any option to buy the asset during the lease period.	It allows the lessee to have a purchase option during the lease period.
Expenses borne	Usually, the lessor bears the cost of repairs, maintenance or operations.	The lessor does not bear the cost of repairs, maintenance or operations.
Treatment	Lease payment is treated like operating expenses like rent.	Finance lease is generally treated like a loan.

(d) Three principles relating to selection of marketable securities are as follows

Safety: Return and risks go hand in hand. As the objective in this investment is ensuring liquidity, minimum risk is the criterion of selection.

Maturity: Matching of maturity and forecasted cash needs is essential. Prices of long term securities fluctuate more with changes in interest rates and are therefore, more risky.

Marketability: It refers to the convenience, speed and cost at which a security can be converted into cash. If the security can be sold quickly without loss of time and price it is highly liquid or marketable.

(4 x 4 = 16 Marks)

Answer 6 :

(a)

(i) (1) Comparative Profitability Statements

Particulars	Process- A (₹)	Process- B (₹)
Selling Price per unit	20.00	20.00
Less: Variable Cost per unit	12.00	14.00
Contribution per unit	8.00	6.00
Total Contribution	32,00,000 (8 × 4,00,000)	24,00,000 (6 × 4,00,000)
Less: Total fixed costs	30,00,000	21,00,000
Profit	2,00,000	3,00,000
*Capacity (units)	4,30,000	5,00,000
Total Contribution at full capacity	34,40,000 (8 × 4,30,000)	30,00,000 (6 × 5,00,000)
Fixed Cost	30,00,000	21,00,000
Profit	4,40,000	9,00,000

Process- B should be chosen as it gives more profit.

(2)

Particulars	Process- A (₹)	Process- B (₹)
*Capacity (units)	6,00,000	5,00,000
Total contribution	48,00,000 (8 × 6,00,000)	30,00,000 (6 × 5,00,000)
Fixed Cost	30,00,000	21,00,000
Profit	18,00,000	9,00,000

Process-A be chosen.

***Note: It is assumed that capacity produced equals sales.**

(4 Marks)

(ii) Difference between Fixed and Flexible Budgets

	Fixed Budget	Flexible Budget
1.	It does not change with actual volume of activity achieved. Thus it is rigid	It can be re-casted on the basis of activity level to be achieved. Thus it is not rigid.
2.	It operates on one level of activity and under one set of conditions	It consists of various budgets for different level of activity.
3.	If the budgeted and actual activity levels differ significantly, then cost ascertainment and price fixation do not give a correct picture.	It facilitates the cost ascertainment and price fixation at different levels of activity.
4.	Comparisons of actual and budgeted targets are meaningless particularly when there is difference between two levels.	It provided meaningful basis of comparison of actual and budgeted targets.

(4 Marks)

(b) Statement showing the evaluation of two machines

Machines	A	B
Purchase Cost (Rs.):(i)	1,50,000	1,00,000
Life of machines (years)	3	2
Running cost of machine per year (Rs.):(ii)	40,000	60,000
Cumulative present value factor for 1-3 years@10%:(iii)	2,486	-
Cumulative present value factor for 1-2 years@10%:(iv)	-	1,735
Present value of running cost of machines (Rs.):(v)	99,440	1,04,100
	[(ii) × (iii)]	[(ii) × (iv)]
Cash outflow of machines (Rs.): (vi)=(i)+(v)	2,49,440	2,04,100
Equivalent present value of annual cash outflow	1,00,338	1,17,637
	[(vi) ÷ (iii)]	[(vi) ÷ (iv)]

Decision : Company X should buy machine A since its equivalent cash outflow is less than machine B.

(8 Marks)

Answer 7 :

(a) Cost plus contract: Under cost plus contract, the contract price is ascertained by adding a percentage of profit to the total cost of the work. Such types of contracts are entered into when it is not possible to estimate the contract cost with reasonable accuracy due to unstable condition of material, labour services etc.

Following are the advantages of cost plus contract:

- (i) The contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on the contract.

- (ii) It is useful specially when the work to be done is not definitely fixed at the time of making the estimate.
 - (iii) Contractee can ensure himself about the 'cost of contract' as he is empowered to examine the books and documents of the contractor to ascertain the veracity of the cost of contract.
- (b)** The main objectives of introduction of a Cost Accounting System in a manufacturing organization are as follows:
- (i) Ascertainment of cost:** The main objective of a Cost Accounting system is to ascertain cost for cost objects. Costing may be post completion or continuous but the aim is to arrive at a complete and accurate cost figure to assist the users to compare, control and make various decisions.
 - (ii) Determination of selling price:** Cost Accounting System in a manufacturing organisation enables to determine desired selling price after adding expected profit margin with the cost of the goods manufactured.
 - (iii) Cost control and Cost reduction:** Cost Accounting System equips the cost controller to adhere and control the cost estimate or cost budget and assist them to identify the areas of cost reduction.
 - (iv) Ascertainment of profit of each activity:** Cost Accounting System helps to classify cost on the basis of activity to ascertain activity wise profitability.
 - (v) Assisting in managerial decision making:** Cost Accounting System provides relevant cost information and assists managers to make various decisions.

(c)

Sl. No.	Result in inflow/ outflow of funds
(i)	outflow, Total current liabilities are increased but total current assets remain unchanged.
(ii)	Inflow, current assets are increased but total current liabilities remain unchanged.
(iii)	No effect, Both the total current assets and current liabilities remain unchanged. OR If examinees assumed that proposed dividend as Non- current liability then payment of final dividend is considered as out flow of fund.
(iv)	No effect, Neither the total current assets nor the total current liabilities are affected.

(d) The fundamental principles are:

- (i) Cost Principle:** According to this principle, an ideal pattern or capital structure is one that minimises cost of capital structure and maximises earnings per share (EPS).
- (ii) Risk Principle:** According to this principle, reliance is placed more on common

equity for financing capital requirements than excessive use of debt. Use of more and more debt means higher commitment in form of interest payout. This would lead to erosion of shareholders value in unfavourable business situation.

(iii) Control Principle: While designing a capital structure, the finance manager may also keep in mind that existing management control and ownership remains undisturbed.

(iv) Flexibility Principle: It means that the management chooses such a combination of sources of financing which it finds easier to adjust according to changes in need of funds in future too.

(v) Other Considerations: Besides above principles, other factors such as nature of industry, timing of issue and competition in the industry should also be considered.

(e) **(i) Leveraged Lease:** Under this lease, a third party is involved beside lessor and lessee. The lessor borrows a part of the purchase cost (say 80%) of the asset from the third party i.e., lender and asset so purchased is held as security against the loan. The lender is paid off from the lease rentals directly by the lessee and the surplus after meeting the claims of the lender goes to the lessor. The lessor is entitled to claim depreciation allowance.

(ii) Profit Centres are the part of a business which is accountable for both cost and revenue. These are responsible for generating and maximizing profits. Performance of these centres is measured with the volume of profit it earns.

(4 x 4 = 16 Marks)
