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SRI LANKA

Association of Accounting Technicians of Sri Lanka

July 2015 Examination - AA3 Level

Questions and Suggested Answers
Subject No : 32

MANAGEMENT ACCOUNTING AND FINANCE (MAF)

SECTION – A

Answers to ALL questions are expected.

Suggested Answers to Question One:

(a) **Examples of "good debt" for an individual:**

1. **Student loan:** This is a good investment for the bright future of a child.

2. **Housing loan (Mortgage):** It will enable purchasing of a house. Monthly mortgage payment is better than monthly rental for the family which does not an own a house.

3. **Investing in your own business:** If your business does well, loan will assist for the growth of the business.

4. **Buying an affordable car on lease or loan:** This will affect the social status of a family. However, it is important that a person should be able to afford the loan repayment and running cost out of his income.

(b) **Difference between savings and investments ;**

Saving is the process of keeping money aside for short- term goals. Savings are made to face emergencies and liquidity problems. Savings secure future life from financial issues under the situations where an individual or a business is unable to earn income evenly or face emergencies.

Investment is a process of keeping money aside for long- term goals. Investment can be defined as "sacrificing present consumption for future economic benefits". Main purpose of an investment is to generate future income or increase of wealth.

Suggested Answers to Question Two:

Length of working capital cycle = (Inventory residence period + Trade receivables collection period – Trade payables settlement period)

	In days
Inventory residence period (Note 1)	71
Collection period of trade receivables (Note 2)	64
	135
Less – Settlement period of trade payables (Note 3)	(93)
Length of working capital cycle for the year ended 31st March 2015	**42**

Workings (According to the question, it should be assumed that all purchases and sales are on credit terms)

(Note 1)

1. Inventory residence period = (Average inventory/ Cost of goods sold) x 365 Days

$$\left\{\left[(1{,}920 + 1{,}480)\right]\big/2\right\}\Big/8{,}700 \times 365 = \underline{\textbf{71 days}}$$

(Note 2)

2. Collection period of trade receivables = (Average trade receivables / Turn-over x 365 days)

$$\left\{\left[(1{,}050 + 2{,}720)\big/2\right]\right\}\Big/10{,}680 \times 365 \text{ days} = \underline{\textbf{64 days}}$$

(Note 3)

3. Settlement period of trade payables = (Average trade payables / Purchases x 365 days)

There is no value of the purchases given in the question. Therefore value of the purchases should be calculated.

(Cost of goods sold + Closing inventory value – Opening inventory value) = Purchases

(8,700 + 1,480 - 1,920) = 8,260

$$\left\{\left[(2{,}320 + 1{,}910)\big/2\right]\right\}\Big/8{,}260 \times 365 \text{ days} = \underline{\textbf{93 days}}$$

Suggested Answers to Question Three:

(a.1)

Cost components	Identification of irrelevant cost	Identification of relevant cost
1. Material	Book value of 20 square meters Rs. 120,000	Current market Value of 120 square meters required Rs. 5800 x 120 = Rs. 696,000
2. Labour	Required Labour hrs. (80hrs x 10Nos.) = 800hrs. Required labourers would be 5 nos. Cost of labour is (Rs. 60,000x 5) = Rs. 300,000	Each of the direct labourers involved for manufacturing is paid Rs. 15000, incentive commission. Therefore, total commission per order is Rs. 15,000 x 5 = Rs. 75,000
3. Overhead	Fixed overheads = Rs. 50 per labour hr. x 800 hrs.=(Rs. 50 x 800hrs) = Rs. 40,000	Incremental overhead cost = Rs. 25,000x10) = Rs.250,000

(a.2)

Cost components	Reasons to consider as irrelevant cost	Reasons to consider as relevant cost
1.Material	Book value is historical, because it is already incurred by the company.	The company produces boats for its normal business. If materials available at present are used for the new order, it has to purchase a new, for normal operations. Therefore current market price should be considered.

2.Labour	At present the company incurs labour cost for 5 additional labourers. Labour cost will not increase due to additional order.	Incentive commission is an additional cost on the new order. It is an incremental cost.
3.Overhead	Monthly production overheads of Rs. 3,000,000 is fixed, and it does not increase due to new order. Budgeted Overhead absorption rate is calculated as budgeted overhead divided by budgeted labour hours determined on budgeted production.	Incremental cost of production overheads is (Rs.25000 x 10) Rs. 250,000.

(b).

Cost of the order

	Rs.	
Direct materials	696,000	
Direct Labour	75,000	
Incremental overheads	250,000	
Total incremental cost	**1,021,000**	
Cost per Boat is, Rs. 1,021,000/ 10Nos.		= Rs. 102,100
Price proposed by the client		= Rs. 100,000
Loss		**Rs. 2,100**

Recommendation:

The company will incur a loss of Rs. 21,000, if the boat order is accepted at the price of Rs. 100,000. Therefore, it is recommended not to accept the order.

Suggested Answers to Question Four:

(a)   Expected Sales value

Customer reaction	Campaign 1	Campaign 2	Campaign 3
High	30,000	54,000	24,000
Medium	45,000	29,250	24,000
Low	4,000	3,000	12,000
Expected sales units	**79,000**	**86,250**	**60,000**
Selling price per unit	140	140	140
Expected sales revenue	**11,060,000**	**12,075,000**	**8,400,000**
Less - Variable Cost	(3,950,000)	(4,312,500)	(3,000,000)
Marketing campaign cost	(6,500,000)	(9,550,000)	(3,450,000)
Expected net income	**610,000**	**(1,787,500)**	**1,950,000**

(b)   Campaign 3 should be selected as it gives the expected highest net income of Rs. 1,950,000/-

Answers to ALL questions are expected.

(Total 32 marks)

Suggested Answers to Question Five:

(a.1) Contribution per unit

Details	Product X	Product Y
Selling Price Rs.	12,000	7,500
Profit Volume Ratio	25%	32%
Contribution per unit Rs.	3,000	2,400

(a.2) Contribution per limiting factor

Details	Product X	Product Y
Contribution per unit Rs.	3,000	2,400
Working Hours - Dept. P	20	20
- Dept. Q	30	10
Contribution per working Hrs.		
- Dept. P	Rs. 3,000/20 = **Rs. 150**	Rs. 2,400 /20= **120**
- Dept. Q	Rs. 3,000/30 = **Rs. 100**	Rs. 2,400/10 = **240**

(b) (i)

Decision Variables:

1.   Nos. of unit X to be produced per week

2.   Nos. of unit Y to be produced per week

(b) (ii)

Objective function:

Objective of the company is to maximize the contribution because it will lead to maximize total profit of the company.

We assume that company can produce and sell X numbers of unit from X product and Y numbers of product from product Y. If so,

$$3,000X + 2,400Y = Z$$

(b) (iii)

Constraints in the form of equations:

Working Hrs. Department P =   20 X + 20Y ≤ 12,000 Hrs

Working Hrs. Department Q =   30 X + 10Y ≤ 9,600 Hrs

(c) Graphical solution :- Alternative method → Solution under simultaneous equations method

Constraint 1 - Working Hrs. of Department- P

$20 X + 20Y \leq 12,000$

If, $X = 0$

$Y = 12,000/ 20 = 600$ Units

If, $Y = 0$

$X = 12,000/20 = 600$ units

Constraint 2 - Working Hrs. Department - Q

$30 X + 10Y \leq 9,600$

If, $X = 0$

$Y = (9,600/ 10) = 960$ Units

If, $Y = 0$

$X =(9,600/30) = 320$ units

$20 X + 20Y = 12,000$ --------- 1

$30 X + 10Y = 9,600$ --------- 2

$1 \times 1.5 = 30X + 30Y = 18,000$ --------- 3
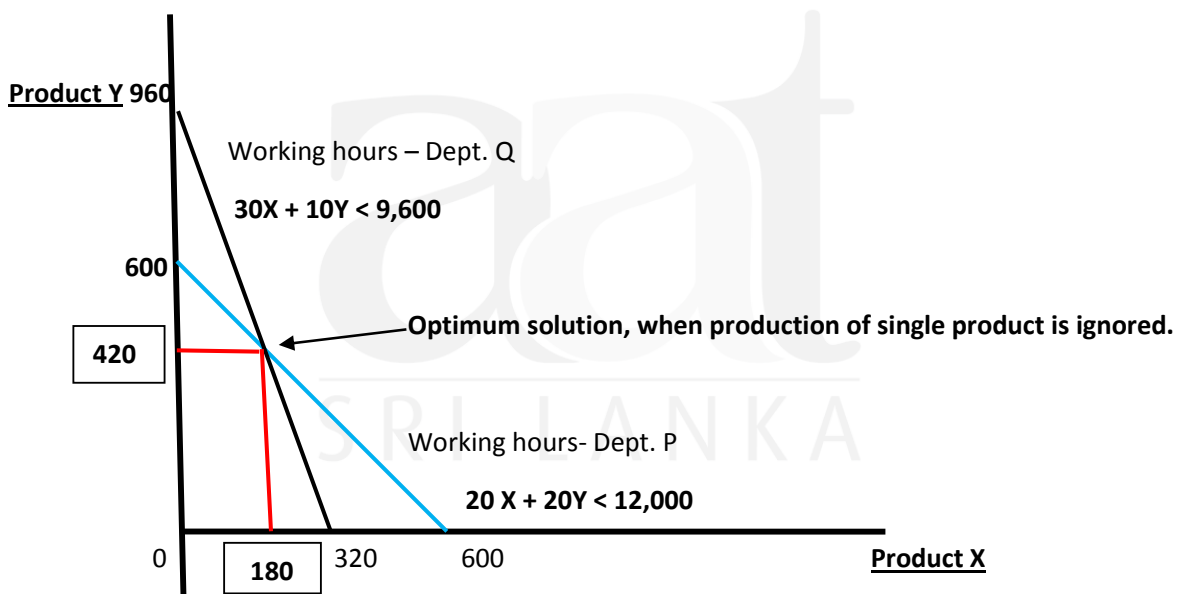
$30X   + 10Y = 9,600$ --------- 4

$3 - 4$ $20Y = 8,400$

$Y =   420$

when Y =480 substitutes

$X =   180$

Product mix for maximization of contribution

Products	No. of Units
X	180
Y	420

(d). Total contribution per week:

Products	X	Y	Total
Sales Units	180	420	
Contribution per unit Rs.	3,000	2,400	
Total contribution Rs.	540,000	1,008,000	1,548,000

Suggested Answers to Question Six:

(a) Advantages on issuing debentures compared to a bank loan:

1. **Maturity:** If the company issues irredeemable debentures, they can use the funds raised on debentures for a foreseeable future.

2. **Convertibility:** Certain types of debentures are issued with the option of conversion into equity. If the company issues these types of debentures, the company can convert them to equity share holders avoiding the cash outflows on redemption.

3. **Benefit on call option:** Call option allows the company to buy back its debentures on terms of agreement before maturity date, when market price is low.

4. **Floating interest rate:** If the company issues debentures at floating interest rate, interest can be changed according to the interest as per rates in the financial market.

5. **Diversification** of fund suppliers.

(b) Cost of Debt:

Option 1 - Cost of redeemable debentures

Details	Yr.0	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5
Cash Flows Rs.	102	-15	-15	-15	-15	-15- 100
	102	-15	-15	15	-15	-115
If discounting Factor is 15%	1.00	.870	.756	.658	.573	.497
Present Value	102	-13.05	-11.34	-9.87	-8.595	-57.155
Net present value	**1.99**					
If discounting Factor is 10%	1.00	.909	.826	.751	.683	.621
Present Value	102	-13.635	-12.39	-11.265	-10.245	-71.415
Net present value	**-16.95**					

IRR = 10% + {16.95 / (1.99 + 16.95)} x (15% -10%) = 14.47%

Cost of redeemable debenture = 13.88%

Option 2 – Cost of irredeemable debentures

$$P0 \quad = \text{(Interest / r)}$$
$$93 \quad = 13 / r$$
$$93r \quad = 13$$
$$r \quad = \text{(13/93) x 100}$$
$$r \quad = 13.98\%$$

Option 3 – Cost of bank loan

$$r \quad = 14.5\%$$

Statement of cost of Debt

Options	Cost of debt
5 year redeemable debenture	14.47%
Irredeemable debenture	13.98%
5 year Bank loan	14.5%

* Cheapest cost of debt is the option 2 – Irredeemable debenture.

(C). Weighted Average Cost of Capital (WACC)

Capital Structure	Market Value Rs. Mn	Weight of Capital %	Cost of Capital %	WACC %
Equity Capital	250	71.43	15	10.7145
Irredeemable Debenture	100	28.57	13.98	3.9940
	350	100.0		**14.7%**

Or

WACC = (51.48 / 350) x 100   = **14.7%**

Workings :

	MV	Rate	Total Cost
Equity capital	250mn	15%	37.5 mn
Debt capital	100mn	13.98%	13.98mn
	350mn		**51.48mn**

Suggested Answers to Question Seven:

(a) (i) Statement of annual profit

		Rs.	Rs.
Sales (144,000 X 700)			100,800,000
Less- Variable cost			
Direct Material	(144,000 X 220)	31,680,000	
Direct Labour	(144,000 X 110)	15,840,000	
Other variable cost	(144,000 X 70)	10,080,000	(57,600,000)
Contribution			43,200,000
Less – Fixed overhead (144,000 X 90)			(12,960,000)
Profit			**30,240,000**

OR

SP	=	700
VC	=	(400)
Contribution / Unit	=	300
Expected annual profit	=	Total contribution - Fixed cost
	=	300 x (144,000 - 90) x 144,000 = **30,240,000**

(ii) Break –even point in units

Break- even point in units	= (Fixed cost / Contribution per unit)
	= Rs. 12,960,000 / [700 – (220+110+70)]
	= Rs. 12,960,000 / 300
	= **43,200 pairs of slippers (Units)**

(b) I. Required sales outlets to meet the annual demand:

Annual demand	= 144,000 pairs of slippers
Expected sales from one outlet	= (3,000 X 12)= 36,000 pairs of slippers
	= Annual demand / Annual sales per outlet
Required sales outlets	= 144,000 / 36,000
	= **4 sales outlets**

II. Expected annual profit under proposed arrangement:

	Rs.	Rs.
Sales (144,000 X 800)		115,200,000
Less- Variable cost		
Direct Material (144,000 X 220)	31,680,000	
Direct Labour (144,000 X 110)	15,840,000	
Other variable cost (144,000 X 70)	10,080,000	(57,600,000)
Contribution		57,600,000
Less – Fixed production overhead (144,000 X Rs.90)	12,960,000	
Fixed cost of sales outlets (Rs.330, 000X4X12)	15,840,000	(28,800,000)
Profit		**28,800,000**

(c) 1. New break-even units under the proposed arrangement:

Break- even point in units	= (Fixed cost / Contribution per unit)
	= Rs. 28,800,000 / [800 – (220+110+70)]
	= Rs. 28,800,000 / 400
	= **72,000 pairs of slippers (Units)**

II. Break-even number of own sales outlets under the proposed arrangement:

Break-even units	= 72,000 pairs of slippers (Units)
Expected sales from sales outlet	= (3,000 X 12) = 36,000 pairs of slippers
Break-even number of own sales outlets	= 72,000 / 36,000
	= **2 sales outlets**

(d.) Revised market price per unit under proposed arrangement:

		Rs.
Fixed overheads under proposed arrangement	=	28,800,000
Add - Expected profit	=	30,240,000
Expected contribution	=	59,040,000
Add- Variable cost (144,000 X Rs. 400)	=	57,600,000
Required sales	=	116,640,000
Revised sales price per unit = (Rs. 116,640,000/144,000)	=	**810**

Answers to two (02) questions only are expected.

(Total = 28 marks)

Suggested Answers to Question Eight:

(a) **(i).** **Advantages of standard costing: - Any three (03) of the following;**

1. It helps the management in formulating price and production policy.
2. It acts as a yardstick of performance
3. It reduces avoidable wastage and losses
4. It facilitates to reduce clerical and accounting cost and managerial time
5. It creates consciousness of cost control among the personnel , because it fixes standard for their activity and subsequently measures their performance by analyzing variances.
6. It encourages a forward- looking mentality at all levels of management.

(a) **(ii).** **Limitations of standard costing: - Any three (03) of the following;**

1. It may be costly and time consuming to install and to keep up to date standard costing system. It requires high technical skills.
2. Since it is difficult to set correct standards, it is difficult to ascertain correct variances.
3. As far as small business entities are concerned, standard costing is expensive.
4. Standard costing cannot be followed successfully in the industries which are subject to frequent changes that need constant revisions of standards.
5. Standard costing may not be effective in industries which deal in non- standardized products or jobs according to customers' needs.

(b) **Direct Material Price variance:**

Formula = (Revised Budgeted Price per Unit – Actual Price per Unit) X Actual Quantity Used

Material A - (Rs. 20 – Rs. 21) X 15,100 kgs	= 15,100	(Adverse)
Material B – (Rs. 50 – Rs. 48) X 7,700 Kgs	= 15,400	(Favourable)
Price Variance	**= 300**	**(Favourable)**

(c) Direct Material Cost Variance:

Direct Material Price Variance	=	300 (Favourable)
Direct Material Usage Variance	=	6,600 (Adverse)
Direct Material Cost Variance	**=**	**6,300 (Adverse)**

(d)   Computations:

(d)   (i)   Total Standard Direct Material Cost:

Materials	Standard Cost Rs.	Actual Cost Rs.	Standard Price Rs.	Variance Rs.
A	(680,400X 80/180)=302,400	15,100X21= 302,000	20	400 (F)
B	(680,400X100/180)=378,000	7,700X48= 385,000	50	7,000 (A)
Total	680,400	687,000		(6,600)(A)

Workings:

Standard Material Cost

Materials	Quantity Kegs.	Budgeted Price After Revision Rs.	Standard Cost per 5Kg Pack Rs.	Standard Ratio
A	4	20	80	80/180
B	2	50	100	100/180
Total			**180**	

(d)   (ii)   Actual Number of Packs Produced:
(Total Standard Cost of Material /Standard Unit Cost of Materials)
(Rs. 680,400 / Rs.180)
= **3,780 Packs**

(e)   Computation of Variances:

(e)   (i)   Direct Material Mix Variance

Standard of Materials Kgs.	Standard Mix on Actual Usage Kgs.	Actual usage Kgs.	Difference Kgs.	Budgeted Price Rs.	Variance Rs.
A- 4/6	15,200	15,100	100 F	20	2,000 F
B- 2/6	7,600	7.700	100 A	50	5,000 A
	22,800	22,800			**3,000 A**

(e)   (ii)   Direct Material yield Variance

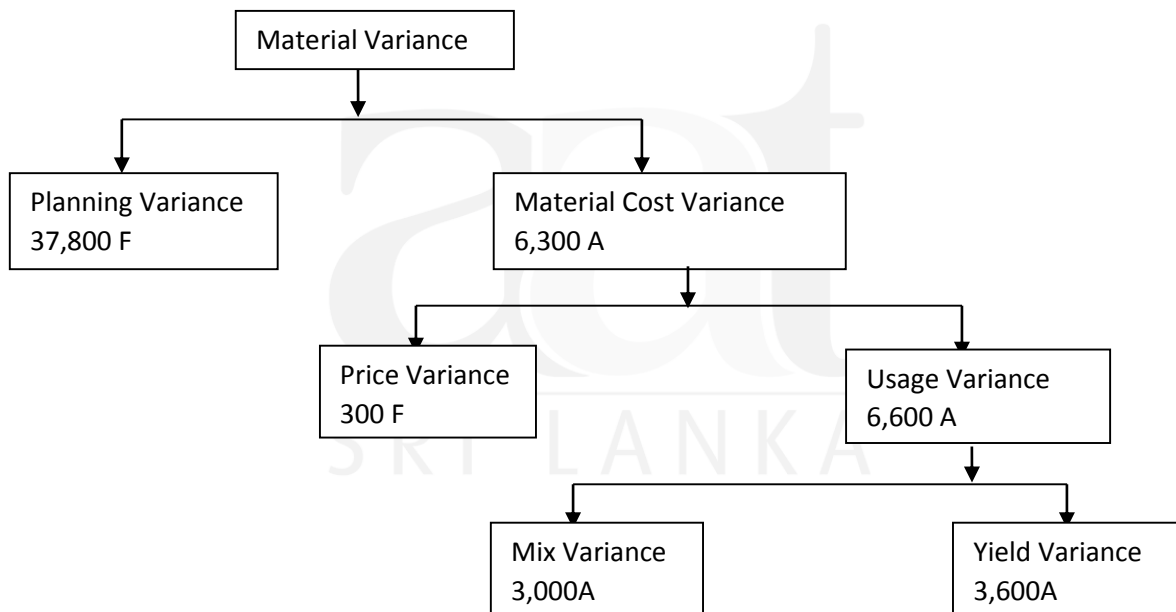| Standard of Materials Kgs.	Standard Mix Kgs.	Std. Mix on Actual usage Kgs.	Difference Kgs.	Budgeted Price Rs.	Variance Rs.
A-4/6	3,780X4=15,120	15,200	80 A	20	1,600 A
B-2/6	3,780X2= 7,560	7,600	40 A	50	2,000 A
	22,680	22.800			**3,600 A**

(e)   (iii)   Direct Material Planning Variance:

(Original Budgeted Cost per Unit – Revised Budgeted Cost per Unit) X Actual Units

(Rs. 190 – Rs. 180) X 3,780Kgs

= **Rs. 37,800 F**

Material Variance

Planning Variance
37,800 F

Material Cost Variance
6,300 A

Price Variance
300 F

Usage Variance
6,600 A

Mix Variance
3,000A

Yield Variance
3,600A

Suggested Answers to Question Nine:

(a)   Number of units sold during the month of May 2015

All sales were made with one month credit period. Therefore, total debtors at the end of May 2015 can be assumed as sales of the month of May 2015.

(Sales Value during the May 2015 / Sales Price) = Number of units sold

Rs. 1,200,000 / Rs. 50

= **24,000 units**

(b) (i) Sales Budget:

Month	May Actual Sales	June 2015	July 2015	August2015
Units	24,000	25,200	26,460	27,783
Value @ Rs. 50 each	1,200,000	1,260,000	1,323,000	1,389,150

(b) (ii) Production Budget:

Month	June 2015	July 2015	August 2015	September 2015
Sales in units	25,200	26,460	27,783	29,172
Less -Opening Inventory in units	(10,000)	(15,876)	(16,670)	
Add- Closing Inventory in units	15,876	16,670	17,503	
Units to be Produced(in units)	31,076	27,254	28,616	

(b). (iii) Direct Material Purchase Budget

Month	June 2015	July 2015	August 2015
Requirement of Raw materials @ 0.5 Kgs. per unit Kgs.	15,538	13,627	14,308
Less -Opening stock in Kgs.	4,250	0	0
Raw Materials to be purchased in Kgs.	11,288	13,627	14,308
Cost of raw material @ Rs. 36 per kg	406,368	490,572	515,088

(b). 1V. Cash Budget:

	Rs.	Rs.	Rs.
Details	June -2015	July-2015	August-2015
Cash in flows			
From Debtors	1,200,000	0	
Bank Loan		1,100,000	1,234,800
Total	**1,200,000**	**1,100,000**	**1,234,800**
Cash out flows			
Payment to suppliers	387,184	448,470	502,830
Wages		372,912	327,048
Variable overheads	440,000	310,760	272,540
Fixed overheads	160,000	160,000	160,000
Sales commission	12,600	13,230	13,892
Total	**999,784**	**1,315,372**	**1,276,310**
Net Cash flow	**218,216**	**(205,372)**	**(41,510)**
Opening Cash Balance	18,000	218,216	12,844
Closing Cash Balance	**218,216**	**12,844**	**(28,666)**

(c).   Four perspectives of the "Balance Scorecard System"

1. **Customer perspective:** Customers are highly considered when business performance is evaluated. Lack of customer satisfaction will adversely affect the future business performances. Target market and ways and means for the enhancement of business should be considered. The following methods of measurement can be used for the perspective.

    a.   Percentage of sales from new product

    b.   Overall customer satisfaction

    c.   Number of complaints

2. **Internal Process perspective:** Internal process is very important in respect of customer satisfaction. Procedures and processes for handling materials, production and quality control should be established in the organization. Key process to add value to customers should be studied in the perspective. The following methods of measurement can be used for the perspective.

    a.   Internal customer satisfaction

    b.   Number of warranty claims

    C.   Number of projects completed on time and within budget

    d.   Cost per unit

    e.   Productivity

3. **Innovation and leaning perspective:** This is very useful to develop the internal business perspective of an organization. New products, markets, and ideas are needed to achieve the competitive advantage and ensure the business growth and survival in the competitive market. The following methods of measurement can be used for the perspective.

    a.   Number of new products versus existing products

    b.   Number of employees who received training

    c.   Time to develop new product

    d.   Development cost on Sales

4. **Financial Perspective:** This reflects the results of the other perspectives. This is used for the purpose of performance management. Top management takes strategic decisions based on financial information presented to them. The following methods of measurement can be used for the perspective. The following methods of measurement can be used for the perspective.

    a.   Profitability

    b.   Return on investment (ROI)

    c.   Sales growth

    d.   Cash flows

Suggested Answers to Question Ten:

(a)   Cash Flows   **Rs.**

Year	0	1	2	3	4	5
Sales		45,000,000	48,000,000	57,000,000	63,180,000	67,080,000
(-) Variable cost of manufacturing						
30,000 x 70 x 12 months		(25,200,000)				
32,000 x 70 x 12 months x 1.08			(29,030,400)			
38,000 x 70 x 12 months x 1.08 x 1.08				(37,231,488)		
40,500 x 70 x 12 months x 1.08 x 1.08 x 1.08					(42,855,402)	
43,000 x 70 x 12 months x 1.08 x 1.08 x 1.08 x 1.08						(49,140,861.24)
(-) Fixed overheads		(5,850,000)	(5,850,000)	(5,850,000)	(5,850,000)	(5,850,000)
(-) Annual service cost		0	0	0	(200,000)	(250,000)
	0	13,950,000	13,119,600	13,918,512	14,274,598	11,839,138.76
Tax @ (prior to capital allowances)		(3,906,000)	(3,673,488)	(3,897,183.36)	(3,996,887)	(3,314,958.854)
(+) Tax saving due to capital allowances (working 2)		3,920,000	3,920,000	3,920,000		
Operating cashflow	0	13,964,000	13,366,112	13,941,328.64	10,277,711	8,524,179.911
Initial investment	42,000,000					
Scrap val;ue of existing machine	400,000					
Net cash flow	**41,600,000**	**13,964,000**	**13,366,112**	**13,941,328.64**	**10,277,711**	**8,524,179.911**

	Tax written down value	Tax saving @ 28%
Initial cost of Asset	42,000,000	
Capital allowance for year 1- 33 1/3%		
42,000,000 x 33 1/3%	(14,000,000)	3,920,000
	28,000,000	
Capital allowance for year 2 - 33 1/3%		
42,000,000 x 33 1/3%	(14,000,000)	3,920,000
	14,000,000	
Capital allowance for year 2 - 33 1/3%		
42,000,000 x 33 1/3%	(14,000,000)	3,920,000

(b)   (i)   Payback period

Year	0	1	2	3	4	5
Cashflow for the year	(41,600,000)	13,964,000	13,366,112	13,941,328	10,277,711	8,524,180
Cumulative cashflow		(27,636,000)	(14,269,888)	(328,560)	9,949,151	18,473,331

Payback   =   3.03 years

(ii)   Accounting Rate of Return   Rs.

Year	0	1	2	3	4	5
Operating cashflow	0	13,964,000	13,366,112	13,941,328.64	10,277,711	8,524,179.911
(-) Depreciation		(8,400,000)	(8,400,000)	(8,400,000)	(8,400,000)	(8,400,000)
42,000,000/5 years						
Net profit	-	**5,564,000**	**4,966,112**	**5,541,328.64**	**1,877,711**	**124,180**

Average profit   =   3,614,666
Average Investment   =   (Initial Investment + Scrap value) / 2
                            =   (42,000,000 + 0) / 2
                            =   21,000,000

Accounting Rate of Return   =   (Average profit / Average investment) x 100%
                            =   (3,614,666 / 21,300,000) x 100%
                            =   **17.2%**

(c)   Net Present Value   Rs.

Year	0	1	2	3	4	5
Net cash flow (1)	(41,600,000)	13,964,000	13,366,112	13,941,329	10,277,711	8,524,180
Discount factor @ 15% (1)		1	0.86957	0.75614	0.65752	0.571753246	0.49718
Discounted cash flow (2)	(41,600,000)	12,142,609	10,106,700	9,166,650	5,876,314	4,238,024

Net Present Value   =   (69,702.53)

NPV of the model (2) machine is negative and therefore the company should not go ahead with that investment.

(d)   IRR of new machine   Rs.

Year	0	1	2	3	4	5
Net cash flow	(41,600,000)	13,964,000	13,366,112	13,941,329	10,277,711	8,524,180
Discount factor @ 12% (1)	1.000	0.89285	0.79719	0.71178	0.63552	0.56743
Discounted cash flow	(41,600,000)	12,467,857	10,655,383	9,923,162	6,531,691	4,836,848

Net Present Value   =   2,814,941
IRR   =   a% + [NPVa / (NPVa - NbVb) x (b - a)%
                    =   12% + [2,814,941 / (2,814,941 - (-69,702))] x (15% - 12%)
                    =   **14.9%**

e. **Importance of the concept of time value of money:**

Time value is based on the belief that a rupee today is worth more than a rupee that will be received at some future date. Capital expenditure is concerned with long run decisions where cost and revenue arise at intervals over a period.

Monies spent or received at different times cannot be compared directly; they must be equivalent to values at some common date. This could be at any time during the project life but appraisal methods which take account of the time factor use either now, the present value, or the end of the project as the common date. Both compounding and discounting methods allow for the time value of money and could thus be used for investment appraisal but on the whole discounting methods are more frequently used.

In general it is preferable to receive a given sum earlier rather than later because the sum received earlier can be put to use by earning interest or some productive investment within the business i.e. money has time productivity.