ICMA Pakistan

SPRING 2013 EXAMINATIONS
Monday, the 2nd September 2013
MANAGEMENT ACCOUNTING – (AF-401)
SEMESTER-4

Extra Reading Time:	**15 Minutes**	**Maximum Marks: 90**	**Roll No.:**
Writing Time:	**02 Hours 45 Minutes**		

(i) Attempt all questions.
(ii) Answers must be neat, relevant and brief.
(iii) In marking the question paper, the examiners take into account clarity of exposition, logic of arguments, effective presentation, language and use of clear diagram/ chart, where appropriate.
(iv) Read the instructions printed inside the top cover of answer script CAREFULLY before attempting the paper.
(v) Use of non-programmable scientific calculators of any model is allowed.
(vi) DO NOT write your Name, Reg. No. or Roll No. anywhere inside the answer script.
(vii) Question No.1 – "Multiple Choice Question" printed separately, is an integral part of this question paper.
(viii) **Question Paper must be returned to invigilator before leaving the examination hall.**

Answer Script will be provided after lapse of 15 minutes Extra Reading Time (9:30 a.m. or 2:30 p.m. [PST] as the case may be).

Marks

Q. 2 The management of Good Luck Company has asked for help in selection of the appropriate activity measures to be used in estimating electricity cost while preparing budget for one of its plants at Lahore. The information as given below shows utility expenses incurred in the past year with two potential activity measures.

Month	Utility Cost (Rs.)	Machine Hours	Labour Hours
January	160,000	2,300	4,200
February	157,000	2,250	4,000
March	161,000	2,400	4,360
April	155,000	2,250	4,000
May	153,000	2,160	4,050
June	154,000	2,240	4,100
July	152,000	2,180	4,150
August	153,000	2,170	4,250
September	158,000	2,260	4,150
October	165,000	2,500	4,500
November	166,000	2,540	4,600
December	162,000	2,450	4,400
Total	1,896,000	27,700	50,760

Required:

(a) Compute the coefficient of correlation 'r' and the coefficient of determination 'r^2' between the cost of utility and each of the two activity measures. **08**

(b) Identify which of the two activity measures should be used as a basis to estimate the allowable cost of utility. **03**

(c) Using the activity measure selected in requirement **(b)** above, compute an estimate of fixed utility cost and the variable utility rate by the method of least squares. **04**

$$b = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sum(x-\bar{x})^2}; \qquad r = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2\sum(y-\bar{y})^2}}; \qquad \bar{y} = a + b\bar{x}$$

Where:

x = independent variable = the level of activity; y = dependent variable = total cost;
$\bar{x}$ = average values of 'x'; $\bar{y}$ = average values of 'y';
a = intercept of the line on the Y axis = the fixed cost;
b = gradient of the line = the variable cost per unit of activity;
r = coefficient of correlation.

Marks

Q. 3 Genuine Motors is an authorized dealer for a foreign-made automobile. Old cars traded in with new models are resold by the company. In addition, Genuine Motors purchases used cars that are not more than two years old models from the employees of large domestic automobile manufacturing plant located in the area, for resale to the general public as used vehicles.

A report showing the actual contribution margin earned in 2012 compared with the budgeted amount of Genuine Motors is summarized below:

	Budgeted			Actual		
	New Cars	**Used Cars**	**Total**	**New Cars**	**Used Cars**	**Total**
Sales – No. of cars	200	300	500	190	320	510
						Rs. in million
Sales	600	720	1,320	562.4	761.6	1,324.0
Cost of goods sold	480	600	1,080	467.4	640.0	1,107.4
Contribution margin	120	120	240	95.0	121.6	216.6

The cost of goods sold consists of variable costs only since this is a retail business.

Mr. Ahmed, President of the company, has concerned about the declining profitability of the business and his initial reaction to the contribution margin report was: "Something has been wrong because I have been following sales closely and I knew we were selling more cars than expected when the budget was prepared. How can our contribution margin possibly be reduced by Rs. 23.4 million from the budgeted amount?"

Required:

Calculate the following variances for the firm's 2012 financial performance for new cars, used cars and total cars:

(a) Selling price variances. **02**

(b) Sales volume variances. **03**

(c) Sales mix variances. **03**

(d) Cost of goods sold variances (variable cost variances). **02**

(e) Calculate total variances showing that the sum of variances as computed in requirements **(a to d)** is equal to the contribution margin variance for the year 2012. **03**

Q. 4 **(a)** An organization is considering to purchase a machine for Rs. 150,000. It would be sold after six years for an estimated realizable value of Rs. 50,000. Capital allowance of Rs. 120,000 would be claimed at Rs. 30,000 per year in four years. The rate of corporation tax is 30% and after tax cost of capital is 14%. The machine would earn profits before tax of Rs. 25,000 a year. Depreciation charge would be Rs. 20,000 a year for six years. Assume the tax payments are made half in the same year and half in the following year.

Required:

(i) Calculate annual incremental after tax cash flows. **05**

(ii) Calculate the net present value (NPV) of the proposal to acquire the machine. **05**

(iii) Calculate internal rate of return (IRR) of the project. **03**

Marks

(b) Faran is considering a project which would cost Rs. 500,000 now. The annual benefits, for four years, would be as under:

- A fixed income will not be affected by inflation of Rs. 250,000 a year.
- Other savings of Rs. 50,000 per year in Year-1 which will be rising by 5% each year because of inflation.
- Running costs will be Rs. 100,000 in the first year, but would increase at 10% every year because of inflating labour costs.

The general rate of inflation is expected to be 7½% and the organization's cost of capital is 16%.

Required:

Do you think that the project is feasible? Substantiate your comments with working. (Ignore taxation.) **05**

Q. 5 (a) Fill in the missing amounts (**'A'** to **'H'**) in each of the situations given below. Each case is independent of the others.

(i) Assume that only one product is being sold in each of the four following case situations: **08**

Rupees

Case	Units Sold	Sales	Variable Expenses	Contribution Margin per Unit	Fixed Expenses	Net Operating Income (Loss)
1	18,000	540,000	324,000	**'A'**	180,000	**'B'**
2	**'C'**	700,000	**'D'**	15	340,000	80,000
3	40,000	**'E'**	560,000	6	**'F'**	70,000
4	10,000	320,000	**'G'**	**'H'**	164,000	(24,000)

(ii) Assume that more than one product is being sold in each of the four following case situations: **08**

Rupees

Case	Sales	Variable Expenses	Average Contribution Margin (%)	Fixed Expenses	Net Operating Income (Loss)
1	900,000	**'A'**	40	**'B'**	130,000
2	400,000	260,000	**'C'**	120,000	**'D'**
3	**'E'**	**'F'**	80	940,000	180,000
4	600,000	180,000	**'G'**	**'H'**	(30,000)

(**Hint:** One way to find the missing amounts would be to prepare a contribution income statement for each case, enter the known data, and then compute the missing items.)

(b) A company plans to experiment activity based costing (ABC) by applying its principles to its four products. Details and relevant information are given below for a particular month:

Products	W	X	Y	Z
Output in units	120	100	80	120
Cost per unit:		Rupees		
Raw material	40	50	30	60
Direct labour	28	21	14	21
Machine hours per unit	4	3	2	3

Marks

All the products are similar and usually manufactured in production runs of 20 units and sold in batches of 10 units. Manufacturing overhead is currently absorbed by using a machine hour rate of Rs. 20 per hour. Total overhead for the month and cost drivers to be used are as follows:

Manufacturing overhead	Amount (Rs.)	Cost driver to be used
Machine department cost	10,430	
Set-up costs	5,250	Number of production runs
Stores receiving	3,600	Requisitions raised
Inspection/ quality control	2,100	Number of production runs
Materials handling and despatch	4,620	Orders executed

Number of requisition raised on the stores was 20 for each product and number of orders executed was 42. Each order has a batch of 10 units.

Required:

Calculate the following:

(i) Total cost for each product, if all overhead costs are absorbed on machine hour basis. **02**

(ii) Manufacturing overhead cost per unit. **04**

(iii) Total cost for each product, using ABC approach. **06**

Q. 6 The Challenger Corporation is trying to determine the optimal level of current assets for the coming year. Management expects that sales will increase to approximately Rs. 3.0 million as a result of asset expansion presently being undertaken. Fixed assets total Rs. 600,000, and the firm wishes to maintain 60% debt ratio. Challenger Corporation's interest cost in currently 10% on both short-term and long-term debt (which the firm uses in its permanent structure). Three alternatives regarding the projected current assets level are available to the firm as under:

(I) A tight policy requiring current assets of only 45% of projected sales;

(II) A moderate policy of 50% of sales in current assets; and

(III) A relaxed policy requiring current assets of 60% of sales.

The firm expects to generate earnings before interest and taxes at a rate of 15% on total sales.

Required:

(a) What is the expected return on equity under each current asset level? (Assume a 35% tax rate.) **11**

(b) In this problem it is assumed that the level of expected sales is independent of current asset policy. Is this a valid assumption? Explain. **02**

(c) How would the riskiness of the firm vary under each policy? **03**

THE END

PRESENT VALUE FACTORS

Year	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162

CUMULATIVE PRESENT VALUE FACTORS

Year	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.736	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.487	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.170	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	3.791	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.355	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	4.868	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	5.335	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	5.759	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	6.145	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192