

# INSTITUTE OF COST AND MANAGEMENT ACCOUNTANTS OF PAKISTAN



## Summer (May) 2011 Examinations

Monday, the 30th May 2011

### MANAGEMENT ACCOUNTING-DECISION MAKING – (S-502)

#### STAGE-5

Extra Reading Time: 15 Minutes

Writing Time: 02 Hours 45 Minutes

Maximum Marks: 90

Roll No.:

- (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 after finishing/ writing the exam.**

**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** A manufacturing company is considering to introduce a new product. The product can be manufactured using either a capital-intensive or labour-intensive method. The manufacturing method will not affect the quality and sales of the product. The estimated manufacturing costs of the two methods are as follows:

	Rs.	
	Capital-intensive	Labour-intensive
Variable manufacturing cost per unit	14.00	17.60
Fixed manufacturing cost per year	2,440,000	1,320,000

The company's market research department has recommended an introductory selling price of Rs.30 per unit for the new product. The annual fixed selling and administrative expenses of the new product are Rs.500,000. The variable selling and administrative expenses are Rs.2 per unit regardless of how the new product is manufactured.

**Required:**

- (a) Calculate the break-even point in units if the company uses the: 04
  - (i) Capital-intensive manufacturing method.
  - (ii) Labour-intensive manufacturing method.
- (b) Determine the unit sales volume at which the net operating income is the same for the two manufacturing methods. 05
- (c) Assuming sales of 250,000 units, calculate the degree of operating leverage if the company uses the: 05
  - (i) Capital-intensive manufacturing method.
  - (ii) Labour-intensive manufacturing method.
- (d) Give recommendations to management concerning which manufacturing method should be used and why? 03

PTO

- Q.3 (a)** An engineering company makes 40,000 units per year of a part, if uses in the manufacturing of its product. The per unit manufacturing cost of this part is as follows:

	Rs.
Direct materials	23.40
Direct labour	22.30
Variable manufacturing overhead	1.40
Fixed manufacturing overhead	24.60
<b>Manufacturing cost per unit</b>	<b>71.70</b>

An outside supplier has offered to sell the company all of these parts it needs for Rs.59.20 a unit. If the company accepts this offer, the facilities now being used to make the part could be used to make more units of a product that is in high demand. The additional contribution margin on this product would be Rs.352,000 per year.

If the part were purchased from the outside supplier, all of the direct labour cost of the part would be avoided. However, Rs.21.90 of the fixed manufacturing overhead cost being applied to the part would continue even if the part were purchased from the outside supplier. This fixed manufacturing overhead cost would be applied to the company's remaining products.

**Required:**

- (i) How much of the unit manufacturing cost of Rs.71.70 is relevant in the decision of whether to make or buy the part? 02
- (ii) Calculate the net total benefit/ loss of purchasing the part rather than making it. 04
- (ii) Workout the maximum amount (per unit) the company would be willing to pay to an outside supplier for the part, if the supplier commits to supplying all 40,000 units required each year. 04
- (b)** Jamshed is the managing partner of a business that has just finished a building of 60-room Guest House. Jamshed anticipates that he will rent these rooms for 16,000 nights next year (or 16,000 room-nights). All rooms are similar and will rent for the same price. Jamshed estimates the following operating costs for next year:

	Rs.
Variable operating costs (per room-night)	30
Fixed costs	
Salaries and wages	1,750,000
Maintenance of building and pool	370,000
Other operating and administrative costs	1,400,000
<b>Total fixed costs</b>	<b>3,520,000</b>

The capital invested in the Guest House is Rs.9,600,000. The partnership's target return on investment is 25%. Jamshed expects that demand for rooms will remain uniform throughout the year. He plans to price the rooms at full cost plus a markup on full cost to earn the target return on investment.

**Required:** Calculate:

- (i) The price should Jamshed charge for a room-night. 03
- (ii) Total operating income. 04
- (iii) The markup as a percentage of the full cost of a room-night. 03
- (iv) Jamshed's market research indicates that if the price of a room-night determined in requirement (i) is reduced by 10%, the expected number of room-nights Jamshed could rent would increase by 10%. Should Jamshed reduce prices by 10%? Show your calculations. 06

**Q.4 (a)** State major features of graphical method used in linear programming.

**(b)** The management of a firm is considering an investment project costing Rs.150,000 and it will have a scrap value of Rs.10,000 at the end of its 5-year life. The transportation charges are expected to be Rs.5,000 and installation charges are expected to be Rs.25,000. If the project is accepted, a spare parts inventory of Rs.10,000 must also be acquired and maintained. It is estimated that the spare parts will have an estimated scrap value of 60% of their initial costs after 5 years.

Annual revenue from the project is expected to be Rs.170,000 and annual labour, material and maintenance expenses are estimated to be Rs.15,000, Rs.50,000 and Rs.5,000 respectively. The depreciation and taxes for each of the five years will be as follows:

Year	Rs.	
	Depreciation	Taxes
1	72,000	11,200
2	43,200	22,720
3	32,400	27,040
4	21,600	31,360
5	800	39,680

**Required:**

Calculate net cash flows for each year and initial cash outflow of the project. Evaluate the project at 12% rate of interest.

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**Q.5** Vie enterprises designs and manufactures toys. Past experience indicates that the product life cycle of a toy is 3 years. Promotional advertising produces large sales in the early years, but there is a substantial sales decline in the final year of a toy's life.

Consumers' demand for new toys tends to fall into three classes: 30% of the new toys sell well above expectations; 60% sell as anticipated; and 10% have poor consumers' acceptance.

A new toy has been developed, and the following sales projections were made by carefully evaluating its consumers' demand:

Consumer Demand for New Toy	Probability of Occurrence	Estimated Sales Rs.		
		Year-1	Year-2	Year-3
Above average	30%	1,200,000	2,500,000	600,000
Average	60%	700,000	1,700,000	400,000
Below average	10%	200,000	900,000	150,000

Variable costs are estimated at 30% of the sales price. Special machinery must be purchased at a cost of Rs.860,000 and will be installed in an unused portion of the factory, which Vie has unsuccessfully been trying to rent for several years at Rs.50,000 per year with no prospects for future utilization. Fixed costs (excluding depreciation) of a cash-flow nature are estimated at Rs.50,000 per year on the new toy. The new machinery is to be depreciated by the sum-of-the-years-digits method with an estimated salvage value of Rs.110,000 and will be sold at the end of the third year. Advertising and promotional expenses will total Rs.100,000 in the first year, Rs.150,000 in the second year, and Rs.50,000 in the third year. These expenses will be deducted as incurred for income tax reporting. The income tax rate is 35%.

**Required:**

Prepare the following:

- (a) A schedule of the new toy's expected/ probable sales for each year. 06
  - (b) A schedule of the new toy's probable net income for each year of its life, assuming that the probable sales are Rs.900,000 in the first year, Rs.1,800,000 in the second year, and Rs.410,000 in the third year. 06
  - (c) A schedule of net cash flows and their net present value assuming minimum desired rate of return of 10% from the new toy's sales for each of the year involved and from disposition of the machinery purchased. [use the information given at (b) above]. 06
- Q.6**
- (a) What is activity based management (ABM)? State the purpose of ABM. 03
  - (b) The terms "cost control" and "cost reduction" are generally used interchangeably. Being management accountant list down the points of differences (at least 5) between these two processes. 05

**THE END**

PRESENT VALUE FACTORS											
Year	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870
2	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756
3	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658
4	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	0.613	0.592	0.572
5	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497
6	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432
7	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376
8	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327
9	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284
10	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247

CUMULATIVE PRESENT VALUE FACTORS											
Year	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870
2	1.859	1.833	1.808	1.783	1.759	1.736	1.713	1.690	1.668	1.647	1.626
3	2.723	2.673	2.624	2.577	2.531	2.487	2.444	2.402	2.361	2.322	2.283
4	3.546	3.465	3.387	3.312	3.240	3.170	3.102	3.037	2.974	2.914	2.855
5	4.329	4.212	4.100	3.993	3.890	3.791	3.696	3.605	3.517	3.433	3.352
6	5.076	4.917	4.767	4.623	4.486	4.355	4.231	4.111	3.998	3.889	3.784
7	5.786	5.582	5.389	5.206	5.033	4.868	4.712	4.564	4.423	4.288	4.160
8	6.463	6.210	5.971	5.747	5.535	5.335	5.146	4.968	4.799	4.639	4.487
9	7.108	6.802	6.515	6.247	5.995	5.759	5.537	5.328	5.132	4.946	4.772
10	7.722	7.360	7.024	6.710	6.418	6.145	5.889	5.650	5.426	5.216	5.019