### PAPER – 15 MANAGEMENT ACCOUNTING-ENTERPRISE PERFORMANCE MANAGEMENT

# TEST PAPER – IV/15/EPM/2008/T-1

Time Allowed: 3 Hours

Full Marks: 100

# Answer Part I and any five Questions from the rest

## <u>Part I</u>

### All questions to be answered. Each question carries 2 marks.

**1.** Definition A: "A technique where the primary goal is to maximize throughout while simultaneously maintaining or decreasing inventory and operating costs."

Definition B: "A system whose objective is to produce or procure products or components as they are required by a customer or for use, rather than for inventory."

Which of the following pairs of terms correctly matches the definitions A and B above?

	Definition A	<b>Definition B</b>
А	manufacturing resource planning	just-in-time
В	enterprise resource planning	material
		requirements
		planning
С	optimized production technology	enterprise resource
		planning
D	optimized production technology	Just-in-time

- 2. Which of the following is not a measure of dispersion of a random variable?
  - A. Range
  - B. Median
  - C. Variance
  - D. Standard error of the mean.

**3.** PQR Company is contemplating marketing a new product. Fixed costs will be Cont'd....2

-: 2 :-

Rs. 8,00,000 for production of 75,000 units-or less and Rs. 12,00,000 if production exceeds 75,000 units. The variable cost ratio is 60% for the first 75,000 units. This ratio will decrease to 50% for units in excess of 75,000. If the product is expected to sell for Rs.25 per unit, how many units must PQR Company sell to break even?

- A. 1, 20,000
- B. 1, 11,000
- C. 96,000
- D. 80,000
- 4. The cost of coordinating the efforts of sub-units is known as
  - A. Opportunity Cost
  - B. Sunk Cost
  - C. Transaction Cost
  - D. Fixed Cost
- **5.** ABC Ltd. is preparing its annual profit plan. As part of its analysis of the profitability of individual products, the accountant estimates the amount of overhead that should be allocated to the individual product lines form the information given below:-

	Wall	Specialty
	Mirrors	Windows
Units products	25	25
Material moves per-product line	5	15
Direct labor hours per unit	200	200
Budgeted materials handling costs.	Rs. 50000	

Under activity-based costing (ABC), the materials handling costs allocated to one unit of wall mirrors would be

- A. Rs. 1000
- B. Rs.500
- C. Rs.1500
- D. Rs.2500
- 6. Consumer Products Division has reported a net profit after tax of Rs 9 lacs for the year ended 30 April 2006. included in the costs used to calculate this profit are the following items
  - Interest payable of Rs Lacs 2
  - Development costs of Rs Lacs 6 for a new product that was launched in May 2005, and is expected to have a life of three years;

-: 3 :-

• Advertising expenses of Rs 2 Lacs that relate to the re-launch of a product in June 2006.

The net assets invested in Division are Rs 30 Lacs

The cost of capital for the Division is 15% per year.

Economic Value Added for Division for the year ended 30 April 2008. is **Rs** Lacs

- А 12.5 В 4.5 С 6.5
- D 15.5
- 7. The Balanced Scorecard is a tool for
  - A. Performance appraisal
  - B. **Financial** appraisal
  - C. Project appraisal
  - D. Credit Appraisal
- Now.con 8. The selection of the denominator in the return on investment (ROI) formula is critical to the measure's effectiveness. Which denominator is criticized because it combines the effects of operating decisions made at one level of the organization with financing decisions made at another organizational level?
  - Total assets available A.
  - Β. Total assets employed
  - C. Working capital
  - D. Shareholder's equity.
- 9. In 2001, a manufacturing company instituted a total quality management (TQM) program producing the following report:

Summary Cost of Quality Report (in thousands)

		2001		2002		% Change	e	
		Rs.		Rs		_		
Prevention cost		200		300		+50		
Appraisal cost	210		315		+50			
Internal failure costs	190		114		-40			
External failure costs	<u>1.200</u> .		621	_	-48			
Total quality costs		1.800	_	<u>1350</u>		25		
							Cont'd	

On the basis of this report, which one of the following statements is most likely correct?

- A. An increase in conformance costs resulted in a higher quality product and a decrease in nonconformance cost.
- B. An increase in inspection costs was solely responsible for the decrease in quality costs.
- C. Quality costs such as scrap and rework decreased by 48%.
- D. Quality costs such as returns and repairs under warranty decreased by 40%.

**10.** Following is a table of probabilities for two separate product lines, X and Y:

Probability	X profit (Rs)	Y profit (Rs	5)
0.20	500	50	
0.70	300	400	
0.10	600	800	

The product line to obtain maximum utility for a risk averse decision maker is A. X because it has the higher expected profit.

- B. Y because it has the higher expected profit.
- C. Y because it has the higher dispersion
- D. X because it has the lower dispersion.

#### Part II

#### Answer any 5 questions. Each question carries 16 marks

1. A distributor buys perishable articles for Rs 20 per item and sells them at Rs 50. Demand per day is uncertain and items unsold at the end of a day represent a write-off because of perishability. If he under stocks, he loses profit he could have made.

A 300, day record of past activity is as follows:

Daily Demand (units)	No. of days	Probability
10	30	0.1
11	60	0.2
12	120	0.4
13	<u>90</u>	<u>0.3</u>
	<u>300</u>	<u>1.0</u>

-: 5 :-

What level of stock should he hold from day to day to maximize profit?

**2.** A company produced three products, the standard costs of witch are shown below:

	Р	R	S
	Rs.	Rs.	Rs.
Direct material	50	40	30
Direct labour (@Rs.10/hour	30	40	50
Production overhead*	30	40	50
	110	120	130
* Absorbed on basis of direct labour hours			
Quantity produced/sold (units)	10,000	20,000	30,000

The company wishes to introduce ABC, and has identified two major cost pools for production overhead and their associated cost drivers.

Information on these activity cost pools and their drivers is given below:

Activity cost pool	Cost Driver	Costs associated with activity cost pool
Receiving /inspecting quality assurance	Purchase requisitions	Rs.1,400,000
Production scheduling/machine set-ups	Number of batches	Rs.1,200,000

Further relevant information on the three products is also given below:

	Р	R	S
Number of purchase requisitions	1,200	1,800	2,000
Number of set-ups	240	260	300

From the information given, calculate the activity-based production cost of products, P, R and S, Also, comment on the differences between the original standard costs and the activity – based costs you calculate.

- **3.** A company is considering investing in a new manufacturing facility with the following characteristics.
  - (a) Initial investment Rs.350000, scrap value nil

- (b) Expected life ten years
- (c) Sales volume 20,000 units a year
- (d) Selling price Rs.20 a unit
- (e) Variable direct costs Rs.15 a unit
- (f) Fixed costs excluding depreciation Rs.25,000 a year.

The project shows an internal rate of return (IRR) of 17%. The managing director is concerned about the variability of the investment as the return is close to the company's rate of 15%. He has requested a sensitivity analysis.

**Requirements:** 

- (a) Recalculate the internal rate of return (IRR) assuming each of the characteristic A to F above, in isolation, varies adversely by 10%.
- (b) Advise the managing director of the most vulnerable area likely to prevent the project meeting the company's hurdle rate.
- (c) Explain what further work might be undertaken to improve the value of the sensitivity analysis undertaken in (a).
- (d) Re-evaluate the situation if another company, already manufacturing a similar product, offered to supply the units at Rs.18 each. This would reduce the investment required to Rs.25,000 and the fixed costs to Rs.10,000.
- **4.** An agriculturist has 480 hectares of land on which he grows potatoes, tomatoes, peas **and** carrots. Out of the total area of land, 340 hectares are suitable for all the four vegetables but the remaining 140 hectares of land are suitable only for growing peas and carrots. Labour for all kinds of firm work is available in plenty.

The market requirement is that all the four types of vegetables must be produced with a minimum of 5.000 boxes of any one variety. The farmer has decided that the area devoted to any crop should be in terms of complete hectares and not in fractions of a hectare. The - only other limitation is that not more than 1,13,750 boxes of any one vegetable should be produced.

The relevant data concerning production, market prices and costs are as under :

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	Potatoes	Peas	Carrots	Tomatoes
Annual Yield				
boxes per hectare	350	100	70	180
Costs:	952	432	384	624
Direct material per hectare				
Direct Labour :	1792	1216	744	1056
Growing per hectare				
Harvesting and packing	7.20	6.56	8.80	10.40
per box				
Transport per box	10.40	10.40	8.00	19.20
Marker price per box	30.76	31.74	36.80	44.55
Fixed expenses per annum:				
Growing	Rs.	1,24,000		
Harvesting	75,000			
Transport	75,000			
General Administration		1,50,000		

It is possible to make the land suitable for peas and carrots, viable for growing potatoes and tomatoes if certain land development work in undertaken. This work will involve a capital expenditure of Rs. 6,000 per hectare which a bank is prepared to finance at the rate of, interest of 15% p.a.. If such improvement is undertaken, the harvesting cost of entire crop of tomatoes will decrease on an average by Rs. 2.60 per box. Required:

- (i) Calculate, within the given constraints, the area to be cultivated in respect of each crop to achieve the largest total profit and the amount of such total profit before land development work is undertaken.
- (ii) Assuming that the other constraints continue advise the grower whether the land development scheme should be undertaken and if so the maximum .total profit that would be achieved after the said development scheme is undertaken.
- 5. Write short notes on
- A Reportable segment
- B Matrix organisation
- C Quality circle
- D Life cycle costing
- **6.** Describe the salient aspects of Function Analysis System Technique.