# PAPER - 15 <br> 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

## Part I

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
manufacturing resource planning
enterprise resource planning
optimized production technology
optimized production technology
Definition B
just-in-time
material
requirements
planning
enterprise resource
planning
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

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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:-

Units products Wall Specialty Mirrors Windows

Material moves per-product line 5
Direct labor hours per unit 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;

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- 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

A 12.5
B $\quad 4.5$
$\begin{array}{ll}\text { C } & 6.5\end{array}$
D 15.5
7. The Balanced Scorecard is a tool for
A. Performance appraisal
B. Financial appraisal
C. Project appraisal
D. Credit Appraisal
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?
A. Total assets available
B. 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)

|  |  | $\begin{aligned} & 2001 \\ & \text { Rs. } \end{aligned}$ |  | $\begin{aligned} & 2002 \\ & \text { Rs } \end{aligned}$ |  | \% Change |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prevention cost |  | 200 |  | 300 |  | +50 |
| Appraisal cost | 210 |  | 315 |  | +50 |  |
| Internal failure costs | 190 |  | 114 |  | -40 |  |
| External failure costs | 1.200 |  | 621 |  | -48 |  |
| Total quality costs |  | 1.800 |  | $\underline{1350}$ |  | --25 |

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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) |
| :--- | :--- | :--- | :--- |
| 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. $\quad \mathrm{X}$ 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 | $\underline{90}$ | $\underline{0.3}$ |
|  | $\underline{300}$ | $\underline{1.0}$ |

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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:

|  | P |  | R |
| :--- | ---: | ---: | ---: |
| S |  |  |  |
| Direct material | Rs. | Rs. | Rs. |
| Direct labour (@Rs.10/hour | 50 | 40 | 30 |
| Production overhead* | 30 | 40 | 50 |
|  | 30 | 40 | 50 |
|  | 110 | 120 | 130 |

* Absorbed on basis of direct labour hours Quantity produced/sold (units)

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\begin{array}{lll}
10,000 & 20,000 & 30,000
\end{array}
$$

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 <br> with activity cost pool |
| :--- | :--- | :--- |
| Receiving /inspecting <br> quality assurance | Purchase requisitions | Rs.1,400,000 |
| Production <br> scheduling/machine set-ups | Number of batches | Rs.1,200,000 |

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

|  | P | 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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| Annual Yield | Potatoes | Peas | Carrots | Tomatoes |
| :--- | ---: | ---: | ---: | ---: |
| boxes per hectare 350 100 70 <br> Costs: 952 432 384 <br> Direct material per hectare <br> Direct Labour : 1792 1216 744 <br> Growing per hectare    <br> Harvesting and packing <br> per box 7.20 6.56 8.80 <br> Transport per box 10.40 10.40 1056 <br> Marker price per box 30.76 31.74 36.00$\quad 10.40$ | 44.50 |  |  |  |

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.

