PAPER – 10: COST & MANAGEMENT ACCOUNTANCY

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	Learning objectives	Verbs used	Definition
LEVEL B	KNOWLEDGE What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identity	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
	APPLICATION How you are expected to apply your knowledge	Apply	Put to practical use
		Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
		Tabulate	Arrange in a table
	ANALYSIS How you are expected to analyse the detail of what you have learned	Analyse	Examine in detail the structure of
		Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
		Construct	Build up or compile
		Prioritise	Place in order of priority or sequence for action
		Produce	Create or bring into existence

Paper – 10: Cost & Management Accountancy

Time Allowed: 3 Hours **Full Marks: 100**

This paper contains 4 questions. All questions are compulsory, subject to instruction provided against each question. All workings must form part of your answer. Assumptions, if any, must be clearly indicated.

1. Answer all questions **[2x10=20]**

(a) A Contract is estimated to be 80% complete in its first year of construction as certified. The Contractee pays 75% of value of work certified, as and when certified and makes the final payment on the completion of contract. Following information is available for the first year:

	₹
Cost of work-in-progress uncertified	18,000
Profit transferred to Profit & Loss A/c at the end of year 1 on incomplete contract	60,000
Cost of work to date	98,000

Calculate the value of work-in-progress certified and amount of contract price.

(b) A lorry starts with a load of 25 tonnes of goods from station A. It unloads 5 tonnes at station B and rest of goods at station C. It reaches back directly to station A after getting reloaded with 18 tonnes of goods at station C. The distance between A to B, B to C and then from C to A are 60 kms. 100kms, and 150 kms respectively. Compute 'Absolute tones – kms' and 'Commercial tones – kms'.

(c) A company is currently operating at 80% capacity level. The production under normal capacity level is 1,50,000 units. The variable cost per unit is ₹14 and the total fixed costs are ₹8,00,000. If the company wants to earn a profit of ₹4,00,000, then calculate the price of the product per unit.

(d) Distinguish between Indifference Point and Break-Even Point with regard to their definition and purpose.

(e) Akash Ltd. is preparing its cash budget for the period. Sales are expected to be ₹1,00,000 in December 2014, ₹2,00,000 in January 2015, ₹3,00,000 in February 2015 and ₹ 1,00,000 in March 2015. Half of all sales are cash sales, and the other half are on credit. Experience indicates that 70% of the credit sales will be collected in the month following the sale, 20% the month after that, and, 10% in the third month after the sale. Calculate the budgeted collection for the month of March 2015.

(f) "Turnover". Is gross turnover whether includes excise duty or not – State.

(g) State the term Cost Audit.

(h) List the determinants of Demand.

(i) The Demand and Supply function under perfect Competition are $y=16-x^2$ and $y=2x^2+4$ respectively. Find the Market Price.

(j) The cost function of a firm is given by $c= x^3 -4x^2 + 9x$, find at what level of output Average Cost is minimum and The Minimum Cost.

2. Answer any two questions. **[2x20=40]**

(a)

(i) The monthly budgets for manufacturing overhead of SHAHEEN LTD. for two levels of activity were as follows:

Capacity	60%	100%
Budgeted production	600	1,000
	₹	₹
Wages	1,200	2,000
Consumable stores	900	1,500
Maintenance	1,100	1,500
Power & Fuel	1,600	2,000
Depreciation	4,000	4,000
Insurance	1,000	1,000
	9,800	12,000

Required:

I. Indicate which of the items are fixed, variable and semi-variable;

II. Prepare a Budget for 80% capacity; and

III. Find the total cost, both fixed and variable per unit of output at 60%, 80% and 100% capacity.

[$1\frac{1}{2}+4\frac{1}{2}+3=9$]

(ii) The following information provides details of costs, volumes and cost drivers for a particular period in respect of AKASH INDUSTRIES LTD. for the products X, Y and Z:

	Product X	**Product Y**	**Product Z**	**Total**
Production and Sales (Units)	30,000	20,000	8,000	
Raw material usage (Units)	5	5	11	
Direct material cost (₹)	25	20	11	12,38,000
Direct Labour hours	$4/3$	2	1	88,000
Machine hours	$4/3$	1	2	76,000
Direct Labour Cost (₹) per unit	8	12	6	
Number of production runs	3	7	20	30
Number of deliveries	9	3	20	32

Number of receipts (2x7)*	15	35	220	270
Number of production orders	15	10	25	50
Overhead Costs (₹):				
Setup	30,000			
Machines	7,60,000			
Receiving	4,35,000			
Packing	2,50,000			
Engineering	3,73,000			
	18,48,000			

* The company operates a just-in-time inventory policy and receives each component once per production run.

In the past, the company has allocated overheads to products on the basis of direct labour hours. However, the majority of overheads are related to machine hours rather than direct labour hours. The company has recently redesigned its costing system by recovering overheads using two volume-related bases: machine hours and a materials handling overhead rate for recovering overheads of the receiving department.

Both the current and the previous cost systems reported low profit margins for Product X, which is the company's highest-selling product.

The cost accountant has recently attended a seminar/workshop on Activity Based Costing and the overhead costs for the last period have been analysed by the major activities in order to compute activity-based costs.

Required:

I. Compute the product costs using a traditional volume-related costing system based on the assumption that:

(A) all overheads are recovered on the basis of direct labour hours (i.e. the company's past product costing system); and

(B) the overheads of the receiving department are recovered by a materials handling overhead rate and the remaining overheads are recovered using a machine hour rate (i.e. the company' s current costing system). **[3+3]**

(iii) Following data is available for T.T.D & Co.:

Standard working hours 8 hours per day 5 days per week

Maximum capacity	50 employees
Actual working	40 employees
Actual hours expected to be worked per four weeks	6,400 hours
Standard hours expected to be earned per four weeks	8,000 hours
Actual hours worked in the four-week period	6,000 hours
Standard hours earned in the four week period	7,000 hours

The related period is of 4 weeks. In this period there was a special one day holiday due to national event. Calculate the following ratios:

(I) Efficiency ratio,(II) Activity ratio, (III) Calendar ratio, (IV) Standard capacity usage ratio, (V) Actual capacity usage ratio. **[5]**

(b)

(i) In its budget for the period ahead 'M' Ltd. is considering two possible sales forecasts for the three products as follows:

	Product		
Forecast	**X**	**Y**	**Z**
I. Sales (Units)	22,000	40,000	6,000
Selling price per unit	₹ 10	₹ 6	₹ 7.50
II. Sales (Units)	30,000	50,000	7,000
Selling price per unit	₹ 9	₹ 5.50	₹ 7.50

Variable costs per unit are expected to be the same at the different levels of possible sales. The variable costs per unit are as follows:

	Product		
Particulars	**X**	**Y**	**Z**
Direct material	3.00	2.00	4.00
Direct labour	2.00	1.50	1.00
Variable overheads	1.00	0.50	1.00

Fixed overheads are expected to total ₹ 1,00,000. These are expected to be unaffected by the possible changes in activity which are being considered. Due to recent high labour turnover problems, direct labour will be restricted to a maximum of ₹ 1,30,000 in the period. It can be assumed that all labour is of the same grade and is freely transferable between products. Other resources are expected to be generally available.

You are required to:

Taking each of the possible sales forecasts in turn

I. Say what the principal budget factor is for each of the forecasts.

II. For each forecast calculate the sales budget that you would recommend to maximize profits.

III. What profit would you expected from each sales budget?

Assume that the products will be sold according to the selling price estimated as per the forecast and no interchange of the forecast is allowed. **[3+3+6=12]**

(ii) Monarch Limited undertakes to supply 1,000 units of a component per month for the months of January, Feb. and March 2015. Every month a batch order is opened against which materials and labour cost are booked at actual. Overheads are levied at a rate per labour hour. The selling price is constructed at ₹15 per unit.

From the following data, present the cost and profit per unit of each batch order and the overall position of the order for 3,000 units.

Month	Batch output (Numbers) ₹	Material Cost ₹	Labour Cost ₹
January 2015	1,250	6,250	2,500
February 2015	1,500	9,000	3,000
March 2015	1,000	5,000	2,000

Labour is paid at the rate of ₹2 per hour. The other details are:

Month	Overheads	Total labour Hour
January 2015	₹12,000	4,000
February 2015	₹9,000	4,500
March 2015	15₹000	5,000

[5+3]

(c)

(i) A manufacturing concern, engaged in mass production produces standardized electric motors in one of its departments. From the following particulars of a job of 50 motors you are required to value the work-in-progress and finished goods. **[5+4]**

I. Costs incurred as per job card:

Particulars	₹
Direct Material	75,000
Direct Labour	20,000
Overheads	60,000

II. Selling price per motor: ₹4,500

III. Selling and distribution expenses are at 30% of sales value.

IV. 25 Motors are completed and transferred to finished goods.

V. Completion stage of work-in-progress:

Particulars	
Direct Material	100%
Direct Labour & Overheads	60%

(ii) P Ltd. has two divisions; S and T. S transfer all its output to T, which finishes the work. Costs and revenues at various levels of capacity are as follows:

Output	S. cost	T Net revenues (i.e. revenue minus costs incurred in T)	Profit
Units	₹	₹	₹
600	600	2,950	2,350
700	700	3,250	2,550
800	840	3,530	2,690
900	1,000	3,780	2,780
1,000	1,200	4,000	2,800
1,100	1,450	4,200	2,750
1,200	1,800	4,350	2,550

Company profits are maximized at ₹2,800 with output of 1,000 units. If P Ltd. wish to select a transfer price in order to establish S and T as profit centres, what transfer price would motivate the managers of S and T together to produce 1,000 units, no more and no less?

P Ltd. wants that the transfer price should be set at ₹2.10 per unit. Comment on this proposal. **[6+(4+1)]**

3. Answer any two questions. **[2x8=16]**

(a) List out the objectives of Cost Audit. **[8]**

(b)

(i) What is meant by Telecommunication Services and what is its coverage? **[6]**

(ii) What is the time limit within which the central government can seek clarification from the Cost Auditor? **[2]**

(c)

(i) Difference between Cost Accounting Policy and Cost Accounting system. **[3]**

(ii) How will you treat the following items in Cost Accounting Records?

I. Interest received on security deposit with the Electricity Board.

II. Voluntary Retirement Compensation paid to workers, included under wages

III. Profit on sale of fertilizers to cane-growers by a sugar company. **[3]**

4. Answer any three questions. **[3x8=24]**

(a) List the factors involved in Demand Forecasting. Name the methods of demand forecasting. **[7+1]**

(b)

(i) NANDINI ELECTRICALS an electronics firm assumes a cost function $C(x)= x\left(\frac{x^2}{10}+200\right)$, where 'x' is a monthly output in thousands of units. Its revenue function is given by R(x) = x(1100-1.5x).

Find:

I. the output required per month to make the Marginal Profit = 0; and

II. the Profit of this level of output **[3+1]**

(ii) State the main features of Perfect Competition Market. **[4]**

(c)

(i) State the term Law of Demand. List the exceptions to the law of demand. **[1+2]**

(ii) The price of desktop computers was slashed from ₹50,000 to ₹25,000, and it was observed that the sale of printers went up from 50 printers per month to 150 printers per month. Determine the cross price elasticity between desktop and printers. **[3]**

(iii) When the income increases from ₹80,000 to ₹81,000, the quantity demanded of good Y increases from 3,000 unit to 3,050 unit. Compute the income elasticity of demand? **[2]**

(d)

(i) HITACHI LTD. an air conditioner manufacturer, produces 'x' sets per week at a total cost of $x^2+780x+25000$. The firm is a monopolist and the demand function for its product is $x = (15000 - \frac{p}{4})$, where the price is 'p' per set.

I. Determine the number of AC sets to be produced per week at which the firm will earn maximum net revenue; and

II. Decide the monopoly price. **[3+1=4]**

(ii) The efficiency (E) of a small manufacturing concern depends on the number of workers (W) and is given by: $10E = \frac{-W^3}{40} + 30W - 392$. Find the strength of the workers, which give maximum efficiency. **[4]**