PAPER - 12
MANAGEMENT ACCOUNTING

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

The figures in the margin on the right side indicate full marks.

Where considered necessary, suitable assumptions may be made and clearly indicated in the answer.

Answer Question No. 1 and any five from Question No. 2, 3, 4, 5, 6, 7 and 8.

SECTION - A
(Compulsory)

1. (a) Choose the correct alternative **[1 × 12 = 12]**

(i) In a product mix decision, which is the most important factor to consider in order trying to maximise profit?

a. contribution per unit of a scarce resource used to make the product

b. contribution per unit of the product

c. variable cost per unit of the product

d. product unit selling price

(ii) Which of the following costs incurred by a commercial airline can be classified as variable?

a. Interest costs on leasing of aircraft

b. Pilots' salaries

c. Depreciation of aircraft

d. None of these three costs can be classified as variable

(iii) A large margin of safety indicates __________________.

a. Over capitalization

b. The soundness of business

c. Overproduction

d. None of the above

(iv) Usually the production budget is stated in terms of _______________.

a. Money

b. Quantity

c. Both of the above

d. None of the above

(v) Revision of budgets is necessary when original budget was prepared with ___________.

a. only management's direction
b. judgement of employees only
c. Inappropriate data
d. All of the above

(vi) Which of the following is NOT a method of transfer pricing?

a. Cost plus transfer price
b. Internal price plus transfer price
c. Market-based transfer price
d. Two-part transfer price

(vii) What transfer pricing method is preferred by Cost Accountant?

a. Cost Based
b. Negotiated
c. Market Based
d. Dual Pricing

(viii) Management accounting deals with _______________ data.

a. qualitative
b. quantitative
c. both qualitative and quantitative
d. only non-financial

(ix) The following is the limitation of management accounting –

a. Costly Affair
b. Evolutionary Stage
c. Psychological Resistance
d. All of the above

(x) Objectives of Management Accounting ________________.

a. Policy formulation
b. Helpful in decision making
c. Helpful in controlling
d. All of the above

(xi) Which of the following costs is relevant in decision-making?

a. committed costs
b. accounting costs
c. historical costs
d. cash costs

(xii) The cost data provide invaluable information for taking the following managerial decision(s)

a. To make or buy
b. To own or hire fixed asset
c. Determining the expansion or contraction policy
d. All of the above

(b) State True or False **[1 × 7 = 7]**

(i) Management Accounting reports are public documents.
(ii) The budgetary control system is designed to fix responsibilities on executives through preparation of budgets.
(iii) A cash budget is a summary of all functional budgets.
(iv) Experience curve effects are reinforced when two or more products do not share a common activity or resource.
(v) Differential Cost is the change in the costs which results from the adoption of an alternative course of action.
(vi) While marginal costing excludes the entire fixed costs, some of the fixed costs may be taken into account as being relevant for the purpose of differential cost analysis.
(vii) The early identification of principal budget factor is important in the budgetary planning process because it indicates which budget should be prepared first.

(c) Fill in the blanks **[1 × 6 = 6]**

(i) The preparation of Du Pont Control chart is related to analysis of __________.
(ii) ___________ contains the picture of total plans during the budget period and it comprises information relating to sales, profit, cost, production etc.
(iii) __________ is stated as a budget which is made to change as per the levels of activity attained.
(iv) _____________________ are often quoted in management literature as those areas in which an organization needs to perform best if it is to achieve overall success.
(v) If a decision maker can estimate the ________________ of future events, these should be incorporated into the decision model.
(vi) Direct costing is also referred as _________________.

SECTION - B
(answer any five questions)

2. (a) "The evolution of managerial accounting has been through *four* particular phases" – explain the four phases. Also discuss the various tools and techniques that developed during each particular phase clearly demarcating the contemporary techniques against the traditional techniques. **[7]**

(b) (i) Kalyani Manufacturing Company has three salaried accounts payable clerks responsible for processing purchase invoices. Each clerk is paid a salary of ₹30,000 and is capable of processing 5,000 invoices per year (working efficiently). In addition to the salaries, Kalyani spends ₹9,000 per year for forms, postage, checks, and so on (assuming 15,000 invoices are processed). During the year, 12,500 invoices were processed.

Required

- Calculate the activity rate for the purchase order activity. Break the activity into fixed and variable components.
- Compute the total activity availability, and break this into activity usage and unused activity.
- Calculate the total cost of resources supplied, and break this into activity usage and unused activity

(ii) "The basic idea justifying the use of Activity-Based Costing (ABC) and Activity-Based Budgeting (ABB) are well publicized, and the number of applications has increased. However, there are apparently still significant problems in changing from existing systems" – in reference to the context, provide explanation as to

- Which characteristics of an organization, such as its structure, product range, or environment, may make the use of activity based techniques particularly useful.
- The problems that may cause an organization to decide not to use, or to abandon theS use of, activity based techniques. **[4 + 4 = 8]**

3. (a) (i) Z plc currently sells products Aye, Bee and Cee in equal quantities and at the same selling price per unit. The contribution to sales ratio for product Aye is 40 per cent; for product Bee it is 50 per cent and the total is 48 per cent. If fixed costs are unaffected by mix and are currently 20 per cent of sales. If the product mix is changed to: Aye 40% Bee 25% Cee 35%
Calculate the new total contribution/total sales ratio.

(ii) RT plc sells three products.
Product R has a contribution to sales ratio of 30%.
Product S has a contribution to sales ratio of 20%.
Product T has a contribution to sales ratio of 25%.
Monthly fixed costs are ₹100 000.
If the products are sold in the ratio: R: 2 S: 5 T: 3
Calculate the monthly breakeven point (to nearest ₹) **[4 + 4 = 8]**

(b) An exporter of garments is earning a profit of ₹ 1,00,000 on a sale of ₹ 12,00,000. Selling price is ₹ 40 per garment and variable cost is ₹. 30 per garment. The exporter incurs an additional fixed cost of ₹. 3,00,000 on product improvement which also enables him to economise ₹ 5 in per garment variable cost. As per trade agreements, the sale of his garments is restricted to the old value of ₹ 12,00,000. What should be the selling price per garment so that the exporter earns the same profit at the same sales value? **[7]**

4. (a) Division A is a profit centre, which produces four products P, Q, R and S. Each product is sold in the external market also. Data for the period is as follows:

	P	**Q**	**R**	**S**
Market Price per unit (₹)	350	345	280	230
Variable Cost of production per unit (₹)	330	310	180	185
Labour hours required per unit	3	4	2	3

Product S can be transferred to Division B but the maximum quantity that might be required for transfer is 2,000 units of S.
The maximum sales in the external market are:
P 3,000 units
Q 3,500 units
R 2,800 units
S 1,800 units

Division B can purchase the same product at a slightly cheaper price of ₹ 225 per unit instead of receiving transfers of products S from Division A.

Suggest the transfer price for each unit for 2,000 units of S, if the total labour hours available in Division A are?

(i) 24,000 hours?

(ii) 32,000 hours? **[8]**

(b) XYZ Ltd which has a system of assessment of Divisional Performance on the basis of residual income has two Divisions, X and Y. X has annual capacity to manufacture 15,00,000 numbers of a special component that it sells to outside customers, but has idle capacity. The budgeted residual income of Y is ₹ 1,20,00,000 while that of X is ₹ 1,00,00,000. Other relevant details extracted from the budget of X for the current year were as follows:

Sale (outside customers) 12,00,000 units @₹ 180 per unit
Variable cost per unit ₹ 160
Divisional fixed cost ₹ 80,00,000
Capital employed ₹ 7,50,00,000
Cost of Capital 12%

Y has just received a special order for which it requires components similar to the ones made by X. Fully aware of the idle capacity of X, Y has asked X to quote for manufacture and supply of 3,00,000 numbers of the components with a slight modification during final processing. X and Y agree that this will involve an extra variable cost of ₹ 5 per unit.

Suggest the transfer price which X should quote to Y to achieve its budgeted residual income. **[7]**

5. (a) (i) MI Ltd. has earned a net profit of ₹ 15 lakhs after Tax at 30%. Interest cost charged by the financial institutions was ₹ 10 lakhs. The Invested capital is ₹ 95 Lakhs of which 55% is debt. The company maintains a weighted average cost of capital of 13%.

- Compute the operating Income.
- Compute the Economic Value Added.
- The company has 6 lakhs equity shares outstanding. How much dividend can the company pay before the value of the entity starts declining?

(ii) The following data are given for the Rajasthan division for 2022:

Return on investment (ROI) 25%

Sales ₹ 12,00,000

Margin 10%

Minimum required rate of return 18%

- Compute the division's operating assets. (use the DuPont analysis of ROI)
- Compute the division's residual income (RI). **[5 + 4 = 9]**

(b) MAGNA CARTA LTD a manufacturers of fountain pens received an order for 16 units of a new fountain pen called the DENIMA. The first unit required 40 direct labour hours.So far, 4 units have been completed and a total of 102.40 direct labour hours has been recorded for the 4 units. The Production Manager expects on 80% learning effect for this type of work.

The direct cost attributed to the centre in which the unit is manufactured and its costs are as follows:

	₹
Direct Material	30.00 per unit
Direct Labour	6.00 per hour
Variable overhead	0.50 per direct labour hour
Fixed overheads apportioned	5.00 per direct labour hour

You are required to calculate the estimated product cost for the initial order based on the cost data given. **[6]**

6. (a) Prepare a Cash Budget for the three months ending 30th June, 2023 from the information given below:

Month	Sales (₹)	Materials (₹)	Wages (₹)	Overhead (₹)
February	14,000	9,600	3,000	1,700
March	15,000	9,000	3,000	1,900
April	16,000	9,200	3,200	2,000
May	17,000	10,000	3,600	2,200
June	18,000	10,400	4,000	2,300

Credit terms are:

⇒ Sales / Debtors: 10% sales are on cash, 50% of the credit sales are collected next month and the balance in the following month.

⇒ Creditors: Materials 2 months

Wages $^1/_4$ month

Overheads $^1/_2$month

⇒ Cash and bank balance on 1st April, 2023 is expected to be ₹ 6,000.

Other relevant information are:

- Plant and machinery will be installed in February 2017 at a cost of ₹ 96,000. The monthly instalment of ₹ 2,000 is payable from April onwards.
- Dividend @ 5% on preference share capital of ₹ 2, 00,000 will be paid on 1st June.
- Advance to be received for sale of vehicles ₹ 9,000 in June.
- Dividends from investments amounting to ₹1,000 are expected to be received in June **[8]**

(b) (i) What is budgetary control? What are the objectives of budgetary control?

(ii) Analyse the importance of revenue centre and investment centre from the view point of operations management. **[4 + 3 = 7]**

7. (a) Pradeep LLP of Delhi follows a standard cost system. For a particular month the following is extracted from their cost records.

Product	**Budgeted**			**Actual**		
	Quantity (Units)	Price (₹)	Value (₹)	Quantity (Units)	Price (₹)	Value (₹)
X	600	3	1800	800	4	3200
Y	800	4	3200	600	3	1800

Analyse Sales Variances **[8]**

(b) ACE LLP follows a standard costing system and produces a product called the 'PRO GEAR'. You are recently appointed as the cost accountant of the Company. The established standards for materials and labour follow:

Material A: 3 Kg @ ₹ 6 ----- ₹ 18

Labour: 4 hr @ ₹ 7.50 per hr ----------- ₹ 30

The operating data for the month of January 2023 are as under:

Work in process, January 1: 200 units, all materials, and 20% complete as to labour.

Work in process, January 31: 600 units, all materials, and 80% complete as to labour.

During the month of January 2023, 6400 units of the product was completed.
All materials are added at the beginning of processing in the department.
20,900 Kgs of materials were used in production during the month, at a total cost of ₹ 1, 23,310.

Direct labour amounted to ₹ 2, 08,670, which was at a rate of ₹ 7.70 per hour.

You are required to critically analyse the necessary variances and comment. **[7]**

8. (a) TIKLIBUKLI School is situated in the outskirts of a town and the school is preparing a summer camp in the jungles of Sonargaon, to train the students in wilderness survival. The school estimates that attendance can fall into one of four categories: 200, 250, 300, and 350 persons. The cost of the camp will be the smallest when its size meets the demand exactly. Deviations above or below the ideal demand levels incur additional costs resulting from constructing more capacity than needed or losing income opportunities when the demand is not met. Letting a1 to a4 represent the sizes of the camp (200, 250, 300, and 350 persons) and s1 to s4 the level of attendance, the following table summarizes the cost matrix (in thousands of Rupees) for the situation:

	s_1	s_2	s_3	s_4
a_1	5	10	18	25
a_2	8	7	12	23
a_3	21	18	12	21
a_4	30	22	19	15

The authorities request your consultancy to apply the following decision criterion and determine the appropriate course of action;

(i) The Minimax Criterion

(ii) The Laplace Criterion

(iii) The Savage Criterion

(iv) The Hurwicz Criterion **[1 + 2 + 2 + 2 = 7]**

(b) (i) How will you use the concept of Expected Value of Perfect Information (EVPI) in managerial decision making?

(ii) A company wishes to go ahead with one of two mutually exclusive projects, but the profit outcome from each project will depend on the strength of sales demand, as follows.

	Strong Demand Profit (₹)	Moderate Demand Profit (₹)	Weak Demand Profit/(Loss) (₹)
Project 1	80,000	50,000	(5,000)
Project 2	60,000	25,000	10,000
Probability of demand	0.2	0.4	0.4

The company could purchase market research information at a cost of ₹ 4,500. This would predict demand conditions with perfect accuracy.

What value the company obtain from this perfect market research information? **[8]**