

PART-I

Case Scenario-I :

Sagar Limited, an oil refinery uses Process Costing for determining the cost of each process. Management of Sagar Limited is confused about method of valuation of WIP. They have FIFO and Weighted Average Cost methods under consideration.

Finance manager Mr. Sahil has put forward that Weighted Average Cost method is suitable when there are significant fluctuations in price and quantity. In this method, calculation has to be done at every purchase and it is a complex and time-consuming method.

He also stated that price and quantity of input and output material of Sagar Limited is almost same for whole year; hence FIFO method would be more suitable for the company. He also revealed that in oil refinery industry; FIFO method is preferred over Weighted Average Cost method and switching to FIFO method will save time and money.

He further stated that by using FIFO method closing WIP is valued at current cost and provided the following information :

Opening WIP : 12,000 Units, Total cost ₹ 1,66,200.

Degree of Completion :	Material	- 100%
	Labour and Overhead	- 80%

Material introduced : (74,500 Units)	₹ 4,76,465
Direct Labour	₹ 3,70,395
Direct Overhead	₹ 2,96,316

Units Scrapped : 1,900 units Degree of Completion : Material 100%

Labour and Overhead 70%

Closing WIP : 2,600 units Degree of Completion : Material 100%

Labour and Overhead 60%

Rest of the units were transferred to next process.

Normal Loss is 2% of total input units including opening work-in-process.  
Realizable value of normal loss is ₹ 2 per unit deducted from cost of material introduced.

You are required to calculate the following using FIFO method (MCQs 1 to 5) :

1. Value of units transferred to next process

2

(A) ₹ 12,75,600

(B) ₹ 11,10,660

(C) ₹ 12,51,200

(D) ₹ 12,72,800

2. Value of closing WIP

2

(A) ₹ 31,044

(B) ₹ 31,096

(C) ₹ 30,940

(D) ₹ 28,340

VAE1

3. Equivalent units of Material and Material cost per unit 2
- (A) 74,500 units and ₹ 6.39 per unit
- (B) 86,500 units and ₹ 5.50 per unit
- (C) 72,770 units and ₹ 6.50 per unit
- (D) 72,600 units and ₹ 6.56 per unit
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4. Equivalent units of labour and overheads and total cost per unit 2
- (A) 74,079 units and ₹ 9.00 per unit
- (B) 82,490 units and ₹ 8.08 per unit
- (C) 75,290 units and ₹ 8.85 per unit
- (D) 79,790 units and ₹ 8.35 per unit
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5. Value of abnormal loss to be shown in process account 2
- (A) ₹ 2,182.00
- (B) ₹ 2,176.00
- (C) ₹ 2,168.35
- (D) ₹ 1,896.52

VAE1

**Case Scenario-II :**

FW Limited manufactures various types of footwear and covers a considerable market share. The footwear made by company are stylish and durable. The management calls for an urgent meeting because it has come to their notice that two of their old permanent customers have moved on to its competitors.

Marketing Manager has stated that there are circumstances when company cannot fulfill the demand of their customers due to shortage of supply and this is the main reason for move on.

Production Manager has stated that production team is working efficiently but workers have to wait long enough for raw material which leads to idle time and low production.

The cost accounts department of FW Limited has furnished the following data for the component B :

Purchase Price	₹ 4,800 per unit
Trade Discount	2% of purchase price
Total duties (No Credit availed)	8% of purchase price
Insurance Charges	₹ 62,000 per year
Units purchased during the year	60,000 units
Opening Stock	5,000 units @ ₹ 5,150 per unit
Closing Stock	4,500 units

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Usages per week		Delivery period	
Minimum	1,050 units	Minimum	5 weeks
Maximum	1,200 units	Maximum	9 weeks
Average	1,125 units	Average	7 weeks

Lead time for emergency purchases is 2 weeks.

Additional Information :

- Normal wastage during the storage is 80 units (no realizable value) and abnormal wastage is 40 units.
- Factory works for 365 days in a year.

You are required to calculate the followings (MCQs 6 to 10) :

6. Calculate average number of days (round off) for which average inventory level to be held.
- (A) 29 days
- (B) 27 days
- (C) 26 days
- (D) 30 days

7. Calculate amount of Abnormal Loss during storage to be transferred to Costing Profit & Loss Account (based on average price) 2
- (A) ₹ 2,04,760
- (B) ₹ 2,04,000
- (C) ₹ 2,03,760
- (D) ₹ 2,05,320
8. Calculate per unit cost of material by using Average Price Method. 2
- (A) ₹ 5,119
- (B) ₹ 5,100
- (C) ₹ 5,094
- (D) ₹ 5,133
9. Calculate minimum stock level. 2
- (A) 7,825 units
- (B) 10,800 units
- (C) 5,250 units
- (D) 2,925 units

(9)  
VAE1

10. What will be danger level of stock ? 2
- (A) 7,875 units  
(B) 2,400 units  
(C) 2,250 units  
(D) 2,240 units
11. On 01-04-2023 number of workers employed in a factory was 150. During the year 30 workers resigned and 5 workers were discharged. Due to resignation and discharge, 15 workers were replaced. For the year 2023-24, labour turnover rate by separation method will be : 2
- (A) 18%  
(B) 21.43%  
(C) 25%  
(D) 30%
12. A Chemical is passed through three processes and the output of Process 1 Account is transferred to Process 2 Account. The input units in Process 1 are 58,500 units and the output units are 55,200 units, normal loss is 2% and rest is abnormal loss.
- You are required to calculate the per unit cost of output units in Process 1 Account, if the total expenses incurred in Process 1 are ₹ 6,87,960. 2
- (A) ₹ 12.00  
(B) ₹ 11.76  
(C) ₹ 12.20  
(D) ₹ 12.46

13. PS Limited is facing downfall in its demand. Marketing team has suggested to reduce the selling price by 5% to compete in the market. Variable cost is 76% of the current selling price.

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You are required to find out the P/V Ratio after reducing the price by 5%.

- (A) 24%  
(B) 20%  
(C) 25.26%  
(D) 19%

14. In the automotive manufacturing sector, a component is manufactured. The Economic Order Quantity (EOQ) for this component is 1,500 units. The cost of placing an order is ₹ 100, and the carrying cost per annum is 10%. The cost per unit of component is ₹ 20.

Calculate the annual demand for this specific automotive component.

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- (A) 75,000 units  
(B) 45,500 units  
(C) 36,000 units  
(D) 22,500 units



VAE1

15. In a mutual project, both Raj and Bhuvan are contributing their efforts, using identical materials. Raj receives a bonus based on the Rowan plan, while the Halsey plan determines Bhuvan's bonus. The standard time allocated for the project is 150 hours. Raj completes the project in 90 hours, while Bhuvan finishes it in 120 hours. The normal hourly wage rate for Raj is ₹ 30. The total earnings for both workers are equal.

2

Calculate the normal hourly wages rate to be paid to Bhuvan.

- (A) ₹ 24.00  
(B) ₹ 26.50  
(C) ₹ 22.50  
(D) ₹ 28.00

## PART – II

1. (a) Language Achievers, a renowned institute specializing in TOEFL preparation, has secured a spacious hall for ₹ 20,000 on weekly basis with a seating capacity of 250 students. The instructor, highly qualified and experienced, is compensated generously with an honorarium of ₹ 1,500 per lecture. Additionally, he receives reimbursement for travel expenses of ₹ 200 per day along with refreshments costing ₹ 1,500 per week to ensure his comfort and focus during teaching sessions. Administrative and miscellaneous expenses, covering essential utilities and materials are ₹ 500 per week. Language Achievers has meticulously planned its curriculum, scheduling batches of 2 lectures per day, 5 days a week for 30 weeks, ensuring comprehensive coverage of the TOEFL syllabus. 5

**Required :**

- (i) Calculate the total cost per batch.
- (ii) Determine the minimum fee per student in a batch to cover costs, if the batch is fully occupied.
- (iii) Calculate the fee to be charged from each student if batch is 80% filled and institute aims to achieve a profit margin of 25% on the fee.

- (b) XYZ Ltd. declared a net profit of ₹ 2,25,000 based on their financial accounts for the year ending 31<sup>st</sup> March, 2024. The profit disclosed in cost books are not matched with financial accounts. The following information were revealed during the scrutiny of the figures of both the sets of books :

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Sr. No.	Particulars	(₹)
1	Preliminary expenses written off in financial accounts	35,000
2	Factory Overheads Over charged in cost accounts	20,000
3	Expenses on issue of shares in financial accounts	30,000
4	Undervaluation of closing stock in cost accounts	65,000
5	Interest on Bank Deposits in financial accounts	60,000
6	Under recovery of administration overheads in cost accounts	25,000
7	Notional Rent of own premises charged in cost accounts	30,000
8	Under recovery of selling overheads in cost accounts	35,000
9	Bad debts recovered in financial accounts	50,000

**Required :**

Prepare Reconciliation Statement to arrive at net profit/loss as per Cost Accounts.

- (c) JC Ltd. has a production capacity of 80,000 units per year. Presently a company produces 60,000 units. Its cost structure is as under :

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Material Cost ₹ 6 per unit

Labour Cost ₹ 4 per unit

Variable overheads ₹ 2 per unit

Total fixed cost ₹ 3,00,000 per annum. Present selling price ₹ 20 per unit. In the month of January, 2024 company received an offer from a Japanese client to supply 20,000 units at a price of ₹ 14 per unit with the additional shipping cost of ₹ 8,000.

**Required :**

- On the basis of changes in the profit, advice to the company, whether the offer should be accepted or not ?
- Will your advice be different, if the customer is local one ?
- If Japanese client offer for supply of 30,000 units to a price of ₹ 14 (part supply of order not accepted) and shipping cost treated as variable cost, analyze the impact on the profit of JC Ltd., if order accepted.

2. (a) MNP Limited have the capacity to produce 84,000 units of a product every month. Its prime cost per unit at various levels of production is as follows :

Level	Prime Cost per unit (₹)
10%	50
20%	48
30%	46
40%	44
50%	42
60%	40
70%	38
80%	36
90%	34
100%	32

Its prime cost consists of raw material consumed, direct wages and direct expenses in the ratio of 3 : 2 : 1. In the month of January 2024, the company worked at 40% capacity and raw material purchased amounting to ₹ 8,40,000. In the month of February 2024, the company worked at 100% capacity and raw material purchased for ₹ 16,46,400.

It is the policy of the company to maintain opening stock of raw material equal to 1/3 of closing stock of raw material. Factory overheads are recovered at 60% of direct wages cost. Fixed administration expenses (as part of production cost) and fixed selling and distribution expenses are ₹ 2,01,600 and ₹ 1,68,000 per month respectively. During the month of January 2024 company sold 33,600 units @ ₹ 68.8 per unit. The variable distribution cost amounts to ₹ 1.5 per unit sold.

The management of the company chalks out a plan for the month of February 2024 to sell its whole output @ ₹ 61 per unit by incurring following further expenditure :

- (i) Company sponsors a television programme on every Sunday at a cost of ₹ 26,250 per week. There are 4 Sundays in February 2024.
- (ii) Hi-tea programme every month for its potential customers at a cost of ₹ 1,05,000.
- (iii) Special gift item costing ₹ 105 on sale of a dozen units.
- (iv) Lucky draws scheme is introduced every month by giving the first prize of ₹ 1,00,000; second prize of ₹ 80,000; third prize of ₹ 40,000 and four consolation prizes of ₹ 8,000 each.

**Note :** (In the month of February 2024, there is a significant saving in material cost per unit due to entry of new suppliers in the market and saving in per unit cost of Direct wages and Direct expenses due to introduction of new policy by the management.)

Prepare a cost sheet for the month of January 2024 and February 2024 showing prime cost (with different elements of prime cost), factory cost, cost of production, total cost and profit earned.

- (b) In a factory there are 50 workers, working 8 hours per day including 30 minutes for lunch break, worked for 160 days during a period of six months ended on 31<sup>st</sup> December, 2023. During this period total employee's cost was recorded ₹ 3,90,000. The management of the factory decided the overtime premium rates for the month of January 2024 as under :

Sundays and holidays 180% of basic wages rate  
Before and after normal working hours 160% of basic wages rate  
During the last six months (ended on 31<sup>st</sup> December, 2023), the following hours were worked :

Normal time	56,250
Sundays and holidays	750
Before and after normal working hours	3,000
Total hours	<u>60,000</u>

During the month of January 2024, the factory worked on a job BX in the following manner.

Normal working	2,400 men hours
Overtime on Sundays and holidays	200 men hours
Overtime before and after normal working	400 men hours
Total hours	<u>3,000</u>

You are required to calculate the labour cost chargeable to job BX and overheads in each of the following situations :

- (i) Where overtime is worked regularly in whole year as a policy on account of shortage of workers.
- (ii) Where overtime is worked irregularly to meet the requirement of production.
- (iii) Where overtime is worked at the request of the customer to complete the job in time.
- (iv) Where overtime is worked on account of flood in the area.

3. (a) GST Limited is a multi-product company. The production and cost details of its two products P and Q are given as follows :

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Particulars	Product	
	P	Q
Quantity produced (No.)	9,000	7,200
Direct material cost (₹)	72,000	50,000
Direct labour hours	800	600
Purchase requisition (No.)	180	144
Production runs (No.)	144	108
Quality inspections (No.)	27	18

Direct wages rate is ₹ 14.50 per hour. Presently the company uses a single overhead recovery rate based on direct labour hours. Overhead incurred by the company during the year 2023-24 are as follows :

Technical staff salary	₹ 45,000
Machine operation expenses	₹ 1,62,000
Machine maintenance expenses	₹ 27,000
Wages and salary of stores staff	₹ 36,000

During this period direct labour hours worked 72,000.

Now the Company wants to adopt Activity Based Costing. For this purpose, following activities are identified :

- Quality control
- Setup of machine for production runs
- Store receiving

It is also decided that salary of technical staff should be distributed among machine maintenance, setup and quality control in the ratio of 1 : 2 : 2. Machine maintenance expenses and machine operation expenses should be distributed in the ratio of 2 : 3 in between stores and production setup activities.

During this period cost drivers for these activities are identified as under :

- Requisition raised 5,760
- Production setup 7,200
- No. of quality test 720

You are required to compute :

- The cost of products P and Q based on traditional absorption costing system.
- The cost of products P and Q based on ABC Costing system.

- (b) Savi Limited is currently working at 80% of its capacity level and furnished the following information for current period : 6

Production / Sales	96,000 units
Direct Variable Cost	₹ 20 per unit
Factory Overheads	₹ 8,40,000
Administrative Overheads (Fixed)	₹ 20,60,000
Sales Commission	2% of Sales Value
Transportation Expenses	₹ 4,000 per truck

(Loading Capacity 4,000 units)

The selling price of the product is ₹ 120 per unit and Factory Overheads are 80% variable in nature.

The management of Savi Limited has come to know that there will be high fluctuations in the demand of the product in upcoming year and it would not be an easy task to predict the demand. Selling price per unit will not be affected by demand fluctuations.

Savi Limited has decided to prepare a flexible budget for the product at 60%, 80% and 100% capacity level.

You are required to prepare the Flexible Budget showing total cost of the product at each level.

4. (a) BG company produces a standard product and sold in a packet of 10 kg. The standard cost card per pack is as follows : 9

Direct Material :

A – 4 kg @ ₹ 50 per kg

B – 8 kg @ ₹ 40 per kg

Direct Labour :

6 hours @ ₹ 20 per hour

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**VAE2**

The company manufactured and sold 1,600 packets during the month. Actual data for material and labour recorded as under.

Direct Material :

A – 7,000 kg @ ₹ 40

B – 12,500 kg @ ₹ 45

Labour hours paid for two different categories of workers:

Skilled                      6,000 hours @ ₹ 25

Semi-skilled              4,000 hours @ ₹ 20

5% of the time paid was lost due to an abnormal reason.

Calculate the following variances indicating their nature (Favourable or Adverse) :

- (i) Material cost variances
  - (ii) Material price variances
  - (iii) Material usage variances
  - (iv) Material mix variances
  - (v) Material yield variances
  - (vi) Labour cost variances
  - (vii) Labour rate variances
  - (viii) Labour efficiency variances
  - (ix) Labour Idle time variances
- (b) Explain Build-Operate-Transfer (BOT) approach and classify the following expenses in Capital Cost or Operating and Maintenance Cost for Toll Roads : 2+3  
=5
- (i) Land acquisition
  - (ii) Interest expenses incurred for servicing term loans
  - (iii) Material and Labour
  - (iv) Toll Collection Expenses
  - (v) Contingency Allowance
  - (vi) Periodic painting cost of railings etc.

5. (a) This data pertains to the three machines operating in the manufacturing division of PQR Corp for the financial year 2023-2024 :

Particulars	Estimated Expenses			
	TOTAL (₹)	Machines		
		X (₹)	Y (₹)	Z (₹)
Direct Labour Expenses (per quarter)	2,50,000			
Oil Expenses (per quarter)	1,03,125	37,500	37,500	28,125
Machine Insurance Expenses (per quarter)	60,000			
Depreciation (per annum)	6,00,000	1,00,000	2,00,000	3,00,000
Building Maintenance Expenses (per quarter)	1,00,000			
Wages of Operator (per quarter)	2,25,000			
Electricity Expenses (per quarter)	3,00,000			
Rent and Rates (per month)	80,000			
Salary of Technician (per month)	62,500			

(The Technician works only on machines X and Y and the Operator controls all three machines and both spend equal time on each of the machines worked upon by them.)

There are 14 holidays besides Sundays in the year, of which six are on Saturdays. There was a Strike of workers for 5 working days (including one Saturday). The manufacturing department operates for 8 hours per day on regular week days, while on Saturdays, the operating hours are reduced by 2 hours per day. All machines operate at 80% capacity throughout the year. Assume 366 days in a year.

The following additional information is also available :

- (i) A 20% hike in the price of oil.  
(ii) A 10% rise in Oil consumption for machines 'X' and 'Y' only.

Particulars	Machines		
	X	Y	Z
No. of Workers	5	3	2
Ratio of K.W. Rating	3	3	4
Ratio of Floor space utilized	1	2	1

**Required :**

Prepare a Statement detailing the allocation of expenses to each machine on an annual basis and thereafter, compute the comprehensive machine hour rate for each of the specified machine.

- (b) ABC Ltd. is a well-known company for producing baby care products. The company produces and sells two variants of organic shampoo for children: "Baby Rose" and "Baby Lily". The sales and cost data for both products are provided below :

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Particulars	Baby Rose	Baby Lily
Current demand and Sales (Number of bottles)	4,000	3,000
Production Capacity (Number of bottles)	7,500	6,000
Selling Price per bottle (₹)	600	750
Variable Costs per bottle :		
– Direct Materials (₹ 20 Per litre)	160	200
– Other Variable Costs	270	350

The fixed costs amount to ₹ 5,00,000 and ₹ 4,50,000 for Baby Rose and Baby Lily respectively. The Production Manager has informed that 1,00,000 litres of material is available for production. A dealer has approached the company and proposed to purchase both products at the existing selling prices, which are to be produced by utilizing the remaining unused material. However, he has insisted that all the bottles must be packed with eco-friendly packaging, which will result in an additional cost of ₹ 10 per bottle for the company. Presently, the company is not using eco-friendly material for packing of bottles.

**Required :**

Prepare a detailed statement showing the overall contribution and profit of the company after acceptance of the dealer's proposal.

6. (a) Describe any five benefits of the Digital Costing System. 5
- (b) Define the following terms : 5
- (i) Controllable Variance
  - (ii) Uncontrollable Variance
  - (iii) Budget Manual
  - (iv) Performance Budgeting
  - (v) Budget Period
- (c) Discuss the treatment of By-products in cost accounting. 4

**OR**

- (c) Define Job costing and explain differences between job and batch Costing. 4