Intermediate
Group I
Paper 8 : COST ACCOUNTING
(SYLLABUS – 2016)

Objectives

1. (a) Multiple choice questions:

(i) What is prime cost

(A) Total direct cost only

(B) Total Indirect production cost

(C) Total non-production cost

(D) Total Production cost.

(ii) If the raw material price is affected by inflation, which of the following methods of valuing stocks will give the lowest gross profit?

(A) FIFO

(B) Simple average

(C) LIFO

(D) Replacement Cost

(iii) If the activity based costing, cost are accumulated by

(A) Cost pool

(B) Cost Objectives

(C) Cost benefit analysis

(D) None of the above

(iv) _____ costing is must for Inter-firm comparison

(A) Batch

(B) Uniform

(C) Marginal

(D) None of the above

(v) Given that sales = ₹ 1,50,000, Variable cost = 60 % ,Fixed cost = ₹40,000,the operating leverage will be

(A) 2.2

(B) 2.5

(C) 3

(D) None of the above

(vi) Selling price of a product is ₹ 6 per unit, variable cost ₹ 4 per unit fixed cost is ₹ 15,000.then Brake Even point in units will be:

(A) 10,000

(B) 7,500

(C) 5,000

(D) 15,000

(vii) AB Ltd. uses pre-determined overhead rate of ₹ 17 per labour hour. The actual labour hours are 5,950 and the actual overhead cost is ₹ 1,10,000.There is

(A) ₹ 8,850 over absorption

(B) ₹ 8,850 under absorption

(C) ₹ 1,000 under absorption

(D) ₹10,000 over absorption

(viii) CAS16 Stands for

(A) Pollution Control Cost

(B) Direct Expenses

(C) Depreciation & Amortisation

(D) Joint Cost

(ix) When overtime is required for meeting urgent orders, overtime premium should be

(A) Charged to costing profit and loss A/c

(B) Charged to Overhead Cost

(C) Charged to respective Jobs

(D) Ignored.

(x) In which of the following incentive plan of payment of wages on time basis are not Guaranteed?

(A) Halsey plan

(B) Rawan plan

(C) Taylor's differential piece rate system

(D) Gantt's task and bonus system

(xi) The Valuation of Closing stock according to Last in first out method of pricing is done at

(A) The latest Prices

(B) The earliest Prices

(C) At average Prices

(D) None of the above.

(xii) _____ + Profit = Sales

(A) Cost of sales

(B) Overhead cost

(C) Prime Cost

(D) Direct Cost

(xiii) In job cost system, cost are accumulated

(A) On a monthly basis

(B) By specific job

(C) By department or process

(D) By Kind of material used

(xiv) Difference between standard cost and actual cost is called as

(A) Wastage

(B) Loss

(C) Variance

(D) Profit

(xv) Budget are _____ plans.

(A) Control

(B) Action

(C) Profit

(D) Finance

(xvi) Standard time is 60 hours and guaranteed time rate is ₹50 per hour. Under Rowan Plan, what is the amount of wages, if job is completed in 48 hrs.

(A) ₹2,480

(B) ₹2,680

(C) ₹2,880

(D) None of the above

(xvii) Which method of costing Interior decoration

(A) Process Costing

(B) Multiple Costing

(C) Operating Costing

(D) Job Costing

(xviii) Marginal Costing Technique follows the following basis of classification

(A) Element Wise

(B) Function Wise

(C) Behavior wise

(D) Identifiably Wise

(xix) The difference between fixed cost & variable cost assumes significance in the preparation of the following budget.

(A) Master Budget

(B) Flexible Budget

(C) Cash Budget

(D) Capital Budget

(xx) Depreciation is a example of-

(A) Fixed Cost

(B) Variable Cost

(C) Semi Variable Cost

(D) None of the above

Answer:

i(D)	ii(C)	iii(A)	Iv(C)	v(C)
vi(B)	vii(C)	viii(C)	ix(B)	x(C)
xi(A)	xii(A)	xiii(B)	xiv(C)	xv(B)
xvi(C)	xvii(D)	xviii(C)	xix(B)	xx(A)

(b) Match the following:

Column 'A'		Column 'B'	
1	**Non Integrated Accounts**	**A**	**CAS21**
2	**Apportionment of Overheads**	**B**	**CAS 16**
3	**Cost Accounting Standard on Treatment of revenue in cost statement**	**C**	**Reciprocal Method**
4	**Cost Accounting Standard on Quality Control**	**D**	**CAS 24**
5	**Zero Based Budgeting**	**E**	**Profitability rate**
6	**De-merit of a centralized purchase organization**	**F**	**Job Evaluation**
7	**Research and Development Costs**	**G**	**High Initial Cost**
8	**Point Rating**	**H**	**CAS18**
9	**Angle of incidence**	**I**	**Decision Package**
10	**Depreciation & Amortisation**	**J**	**Cost Ledger Accounts**

Answer:

1 (J)	2 (C)	3 (D)	4 (A)	5 (I)	6 (G)	7 (H)	8 (F)	9 (E)	10 (B)

(c) State whether the following statements are true or false:

(i) Fixed Costs vary with volume rather than time.

(ii) ABC analysis is based on the unit price of materials.

(iii) Loss = Brake even sales – actual sales.

(iv) Variable overhead vary with time.

(v) Cash discounts are generally excluded completely from costs.

(vi) Store ledger is maintained in the store department.

(vii) As per the payment of Bonus Act, 1965 the maximum limit of bonus is 8.33% of gross earning.

(viii) Departments that assist producing department indirectly are called service departments.

(ix) Overhead are taken on estimated basis in financial accounts.

(x) Cost control accounts are prepared on the basis of double entry system.

Answer:

i (F)	ii (F)	iii (T)	iv (F)	v (F)	vi (T)	vii (F)	viii (T)	ix (F)	x (T)

(d) Fill in the blanks

(i) Breakeven point =contribution = _____.

(ii) Re-order level =_____usage multiplied by _____ lead time.

(iii) In absorption costing _____ cost is added to inventory.

(iv) Penalties/damages paid to statutory authorities_____ be form part of Direct Expenses.

(v) The function of CASB is to assists the members in preparations of uniform _____ under various statue.

(vi) Salary paid to factory manager is an item of _____.

(vii) Equivalent production of 1,000 units, 60% complete in all respects is _____.

(viii) Excess of Actual cost over Standards Cost is treated as _____variance.

(ix) In electricity companies, the cost unit is_____.

(x) A cost which does not involve any cash outflow is called _____ or _____.

Answer:

i (Fixed Cost)	ii(Maximum & Minimum)	iiii(Fixed Cost)	iv(Shall Not)	v(Cost Statement)
vi(Factory Overhead)	vii(600 units)	viii(unfavorable variance)	ix(Kilowat)	x(Notional cost, Imputed cost

Material

2. (a) From the following particulars with the respect to a particulars item of material of XYZ manufacturing company calculate the best quantity to order:

Ordering Quantities (Tons)	Price per Ton (₹)
less than 500	12
500 but less than 1,000	11.80
1,000 but less than 2,000	11.60
2,000 but less than 4,000	11.40
4,000 Above	11.20

(b) The particulars relating to 1,200 kg. of a certain raw material purchased by a company during June, were as follows:-

Lot prices quoted by supplier and accepted by the Company for placing the purchase order:

Lot upto 1,000 kgs. @ ₹22 per kg.

Between 1,000 - 1,500 kgs, @ ₹20 per kg.

Between 1500 -2000 kgs. @ ₹18 per kg.

Trade discount – 20%.

Additional charge for containers @ ₹ 10 per drum of 25 kgs.

Credit allowed on return of containers, @ ₹ 8 per drum.

GST at 10% on raw material and 5% on drums.

Total fright paid by the purchaser ₹ 240/-

Insurance at 2.5% (on net invoice value) paid by the purchaser.

Stores overhead applied at 5% on total purchase cost of material.

The entire quantity was received and issued to production.

The containers are returned in due course. Draw up a suitable statement to show:-

(a) Total cost of material purchased and

(b) Unit cost of material issued to production.

Answer:

2. (a) Statement showing computation of total Inventory cost at different order size

Particulars		Ordering Quantities(tons)				
		400	500	1000	2000	4000
Material Cost		12	11.8	11.6	11.4	11.2
i	Purchasing cost	48000	47200	46400	45600	44800
ii	No of orders	20	16	5	2	1
iii	Ordering Cost	120	96	30	12	6
iv	Average Cost	200	250	500	1000	2000
v	Inventory carrying cost per unit	3	2.95	2.9	2.85	2.8
vi	Inventory carrying cost (iv)x (v)	600	737.5	1450	2850	5600
vii	Total Inventory Cost(i)+(iii)+(vi)	48720	48034	47880	48462	50406

For the above computations the best quantity order is 1000 tons.

Note: Minimum ordering quantity assumed to be 200 tons; it may be any quantity below 250 tons but the decision will remain same.

(b) Statement showing computation of total cost of material purchased and unit cost of material issued for production

Particulars	Unit Cost (₹)	Total Cost(₹)
Basic price of material	20.0000	24000
less: Trade Discount	4.0000	4800
	16.0000	19200
Add: Drum Charges (1200/25*10)	0.4000	480
Add: GST 19,200x 10% = 1920 480* 5% = 24 1944	1.6200	1944
Net Invoice Value	18.0200	21624
Add: Insurance (21,624 x 2.5%)	0.4505	540.6
Add: Freight Paid	0.2000	240
Less: Credit for drums returned (1,200/25x8)	0.3200	384
Total Cost of Material Purchased	18.3505	22020.6
Add: Stores Overhead (22,020.60x5%)	0.9175	1101.03
Material cost issued for production	19.2680	23121.63

3. M/s Tubes Ltd. are the manufacturers of picture tubes for T.V. The following are the details of their operation during the year 2017:

Average monthly market demand	**2,000 Tubes**
Ordering Cost	**₹150 per order**
Inventory carrying cost	**20% per annum**
Cost of tubes	**₹600 per tube**
Normal usage	**150 tubes per week**
Minimum usage	**60 tubes per w eek**
Maximum usage	**220 tubes per week**
Lead time to supply	**8 – 10 weeks**

Compute from the above:

(i) Economic order quantity. If the supplier is willing to supply quarterly 1,950 units at a discount of 8% is it worth accepting?

(ii) Re-order level

(iii) Minimum level of stock

(iv) Maximum level of stock

Answer:

A = Annual usage of tubes = Normal usage per weeks x 52 weeks =150 tubes x 52 weeks =7800 tubes

O = Ordering cost per order = ₹ 110 per order

C = Inventory carrying cost per unit per annum

= 25%* ₹ 600 = ₹ 150per unit, per annum

i. Economic Order Quantity

$$\textbf{E.O.Q} = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 7,800\ \text{units} \times 150}{150}} = 125 \text{ tubes (Approx)}$$

If the supplier is willing to supply 1950 tubes at a discount of 8 % is it worth accepting?

Total cost (when order size is 1950 tubes)=Cost of 7,800units +ordering cost + carrying cost

$$= 7,800\text{units x ₹ } 552 + \left(\frac{7800}{125} \times 150\right) + \left(125 \times 20\% \times 600\right) / 2$$

= ₹43, 05,600 + ₹ 600 + ₹ 1, 07,640

= ₹ 44, 13,848

Total Cost (when order size is 125 tubes)

$$= 7800 \text{ tubes x ₹ } 600 + \left(\frac{7800}{125} \times 150\right) + \left(125 \times 20\% \times 600\right) / 2$$

= ₹46, 80,000 +₹ 9,360 + ₹ 7,500
= ₹46, 96,860

Since the total cost under quarterly supply of 1950 tubes with 8 % discount is lower than that when order size is 125 tubes, the offer should accepted. While accepting this offer capital blocked on order of 1,950 tubes per quarter has ignored.

ii. Re-Order Level:

= Maximum Consumption X Maximum lead time
= 220 tubes X 10 weeks = 2,200 tubes.

iii. Minimum Level of Stock:

= Re-order level - Normal usage X Average re order period
= 2,200 tubes – 150 tubes X 9 weeks = 850 tubes.

iv. Maximum Level of Stock

= Re-order level + Re-order quantity – Min Usage X Min re-order period
=2,200 tubes +125 tubes – 60 tubes X 8 weeks = 2,145tubes

Labour

4. (a) Measurement of Employee Cost (with special items)

Trial Balance as on 31.3.2018 (relevant extracts only)

Particulars	Amount (₹)	Particulars	Amount (₹)
Materials consumed	**1,05,00,000**		
Salaries	**45,00,000**	**Special Subsidy received from Government towards Employee salary**	**5,75,000**
Employee Training Cost	**2,00,000**	**Recoverable amount from Employee out of perquisites extended**	**1,35,000**
Perquisites to Employees	**8,50,000**		
Contribution to Gratuity Fund	**8,00,000**		
Lease rent for accommodation provided to employees	**6,00,000**		
Festival Bonus	**1,05,000**		
Unamortised amount of Employee cost related to a discontinued operation	**90,000**		

(b) The following information is given:

Standard time allowed = 1 hour for 1 unit.

Actual time taken by a worker = 32 hours for 40 units

Standard Wage rate: ₹ 20 per unit or ₹ 20 per hour

Calculate the earnings of the worker under –

(i) Taylor's Differential Piece Rate System

(ii) Merrick Differential Piece Rate System

(iii) Gantt Task Bonus Plan (High piece rate = ₹35/unit)

(iv) Halsey Premium Plan

(v) Rowan Plan

Answer:

(a)

	Particulars	Amount (₹)
	Salaries	45,00,000
Add	Net Cost of Perquisites to Employees Cost of Perquisites (-) amount recoverable from employee = 8,50,000 (-)1,35,000	7,15,000
Add	Lease rent paid for accommodation provided to employee	6,00,000
Add	Festival Bonus	1,05,000
Add	Contribution to Gratuity Fund	8,00,000
Less	Special subsidy received from Government towards employee salary	(5,75,000)
Employee Cost		61,45,000

Note:

(i) Recoverable amount from employee is excluded from the cost of perquisites.

(ii) Employee training cost is not an employee cost. It is to be treated as an Overhead, hence, not included.

(iii) Special subsidy received is to be excluded, as it reduces the cost of the employer

(iv) Unamortized amount of employee cost related to a discontinued operation is not an includible item of cost.

(b) Standard hours= 40; Actual Hours taken= 32; Savings= 8 Hours

Statement showing total earning in different plan (₹)

Taylor's Differential Piece Rate System	Merrick Differential Piece rate System	Gantt Task Bonus Plan	Halsey Premium Plan	Rowan Plan
120%X40X20 = 960	120%X40X20 = 960	40X35 = 1400	(32X20)+(.5X8X20) = 640+80 = 720	(32X20)+[(8/40)X(32X20] = 640+128 = 768

5. The Employees in a factory are paid wages at the rate of ₹14 per hour for an eight hour shift. Each employee produces 5 unit per hour the overhead ₹20 direct labour hour. Employees and the management are considering the following piece rate wage proposal:

	Per Unit (₹)
Upto 45 units per day of 8 hour	**2.60**
From 46 units to 50 Units	**3.20**
From 51 units to 55 units	**3.30**
From 56 units to 60 units	**3.40**
Above 60 units	**3.50**

The working hours are restricted to 8 hour per day. Overhead rate does not change with increased production. Prepare a statement indicating advantages to employees as well as to management to production levels of 40,50,55,60 & 65 units.

Answer:

Time rate for 5 unit =Wage + Overhead= ₹14+₹20 =₹34/hr
Cost of production per unit =34/5 = ₹6.80

Statement showing the saving to employees

Units(A)	Time rate wage(B) (₹)	Piece rate per unit(C)(₹)	Piece rate wage (D)=(BXC))(₹)	Savings(E)=(D-B)(₹)
40	112	2.6	104	-8
45	112	2.6	117	5
50	112	3.2	160	48
55	112	3.3	181.5	69.5
60	112	3.4	204	92
65	112	3.5	227.5	115.5

Statement Showing the saving to the Management

Units (A)	Hours (B)	Time rate Cost (C) (₹)	Time rate basis of total wages (inclusive overhead) (D)=(BXC) (₹)	Piece Rate Cost (E)(₹)	Piece Rate Basis Overhead (F) (₹)	Total (G)= (E+F)(₹)	Savings to the Management (H)=(D-G) (₹)
40	8	34	272	104	160	264	8
45	9	34	306	117	160	277	29
50	10	34	340	160	160	320	20
55	11	34	374	181.5	160	341.5	32.5
60	12	34	408	204	160	364	44
65	13	34	442	227.5	160	387.5	54.5

Direct Expenses

6. The following information relates to the activities of a production department of factory for a certain period.

	(₹)
Material used	**46,800**
Direct Wages	**39,000**
Labour hours	**15,600**
Hours of Machinery -Operation	**26,000**
Overhead chargeable to the Dept	**32,760**

On one order carried out in the department during the period the relevant data were:-

Material used(₹)	**7,800**
Direct Wages(₹)	**6,435**
Labour hours worked(Hours)	**2,145**
Machine Hours	**1,560**

Calculate the overheads chargeable to the job by four commonly used methods.

Answer:

The four commonly used methods of absorbing or recovering overheads are as follows:
1. % of overhead on material = (32,760/46,800)X100 = 70.00%
2. % of overhead on direct wages = (327,60/39,000)X100 = 84%
3. Overhead rate per labour hour = 32,760/15,600 = ₹ 2.10
4. Machine hour rate method = 32,760/26,000 = ₹1.26

The overheads chargeable to job under the above methods is as follows:
1. Material = 7,800X70% = ₹5,460
2. Wages = 6,435X84% =₹5,405.40
3. Labour hour rate = 2,145 X 2.10 = ₹ 4,504.50
4. Machine hour rate = 1,560 X 1.26 = ₹ 1,950

7. For a production department of a manufacturing company you are required to:
(a) prepare a fixed budget of overhead;
(b) prepare a flexible budget of overhead, at 70% and 110% of budget volume;
(C)Calculate a departmental hourly rate of overhead absorption as per (a) and (b) above

The budget level of activity of the department is 5,000 hours per hours per period and the study of the various items of expenditure reveals the following:

	₹		₹ Per hour
Indirect wages			**0.48**
Repairs			
upto 2,000 hours	**120**		
for each additional 500 hours			
upto a total of 4,000 hours	**42**		
Additional from 4,001 to 5,000 hours	**72**		
Additional above 5,000 hours	**84**		
Rent and Rates	**420**		
Power			
Upto 3,600 hours	**0.3**		
for hours above 3,600	**0.24**		
Consumable supplies			**0.288**
Supervision			
Upto 2,500 hours			**480**
Additional for each extra 500 hours			
above 2,500 and upto 5,000 hours			**120**
Additional above 5,000 hours			**180**
Depreciation			
upto 5,000 hours			**780**
Additional for each extra 500 hours		**204**	
Cleaning			
upto 4,000 hours		**72**	
Additional for each extra 500 hours		**24**	
Heat and lighting			
from 2,100 hours to 3,500 hours		**144**	
from 3,501 hours to 5,000 hours		**180**	
above 5,000 hours		**210**	

Answer:

Particulars	(3,500) 70%	(5,000)100%	(5,500)110%
Indirect Wages (48/hrs.)	1,680	2,400	2,640
Repairs	246	360	444
Rent & Rates	420	420	420
Power	1,050	1,416	1,536
Consumable Supplies	1008	1440	1584
Supervision	720	880	1,260
Depreciation	780	780	984
Cleaning	72	72	96
Heating & Lighting	144	180	210
Total	6,120	7,948	9,174
OH rate per hour	1.749	1.590	1.668

1. If the under absorbed OH is 10% or more of actual OH incurred – supplementary OH rate is applied. (or)
2. If the amount is considerable, supplementary OH rate applied otherwise we may follow, transferring to P&L or Carry forward to next year.

Working Notes:

Hours	3,500	5,000	5,500
Repairs	120+(3*42)=246	120+(4X42)+72=360	120+(4X42)+72+84=444
Power	(3,500x.30)=1,050	(3,600X.3)+(1,400X.24)=1,416	(3,600X.3)+(1,900X.24)=1536
Supervision	480+(2X120)=720	480+(4*120)=880	480+(5X120)+180=1,260

8. X ltd engineering Co. having 25 different types of automatic machines, furnishes you the following data for 2017-18 in respect of machine P

1. Cost of the machine ₹ 60,000
Life – 12 years scrap value is nil

2. Overhead expenses are:

Factory Rent	**₹ 95,000 p.a.**
Heating and lighting	**₹ 55,000**
Supervision	**₹2,00,000 p.a.**
Reserve equipment of Machinery P	**₹ 5,000 p.a.**
Area of the factory	**90,000 sq. ft.**
Area occupies	**3,000 sq. ft.**

3. Wages of operator is 32 per day of 8 hours including as fringe benefits. He attends to one machine when it is under set up and two machines while under operation

4. Estimated production hours 3,600 p.a.
Estimated set up time 400 hrs p.a.
Power 0.5 per hour

Prepare a schedule of comprehensive machine hour rate and find the cost of the following jobs:

	Job 1310	**Job 1410**
Set up time (Hrs)	**70**	**55**
Operation Time(Hrs)	**130**	**180**

Answer:

Computation of machine hour rate when machine is in operation

Particulars		Amount (₹)
Standing Charges		
Rent	95,000*4.5/90	4,750
Heating & lighting	55,000*4.5/90	2750
Supervision	2,00,000*4.5/90	10,000
Reserve equipment		5,000
		22,500
Cost per hour	22,500/4,000	5.63
Machine Expenses:		
Depreciation	[60,000/(10X3600)=1.67	
Wages	3[32/8X1/2]=2.00	
Power	=0.50	4.17
Machine Hour Rate		9.8

Computation of machine hour rate when machine is under set up

Particulars		Amount (₹)
Standing Charges		
Rent	95,000*4.5/90	4,750
Heating & lighting	55,000*4.5/90	2750
Supervision	2,00,000*4.5/90	10,000
Reserve equipment		5,000
		22,500
Cost per hour	22,500/4,000	5.63
Machine Expenses:		
Depreciation	[60,000/(10X3600)=1.67	
Wages	[32/8] =4.00	
Power		5.67
Machine Hour Rate		11.3

Computation of cost of the jobs

Particulars	Job 1310 (₹)	Job 1410 (₹)
Setup Cost Job 1310: 70X11.30 Job 1410: 130X11.30	791	1469
Operation Cost Job 1310: 130X9.8 Job 1410: 180X9.8	1,274	1,764
Total Cost of the Job	2,065	3,233

9. (a) List of Scope of CAS-5
(b) Write a short Note on CAS-22

Answer:

(a) Scope of CAS -5

This standard should be applied for calculation of cost of transportation required under any statute or regulations or for any other purpose. For example, this standard can be used for:

(1) Determination of average transportation cost for claiming the deduction for arriving at the assessable value of excisable goods.
(2) Insurance claim valuation.
(3) Working out claim for freight subsidy under Fertilizer Industry Coordination Committee.
(4) Administered price mechanism of freight cost element.
(5) Determination of inward freight costs included or to be included in the cost of purchases attributable to the acquisition.
(6) Computation of freight included in the value of inventory for accounting on inventory or valuation of stock hypothecated with Banks / Financial Institution ...etc.

(b) **CAS – 22**: Cost Accounting Standard on Manufacturing Cost: This standard deals with the principles and methods of determining the Manufacturing Cost of excisable goods. This standard deals with the principles and methods of classification, measurement and assignment for determination of the Manufacturing Cost of excisable goods and the presentation and disclosure in cost statements.

Objective

The objective of this standard is to bring uniformity and consistency in the principles and methods of determining the Manufacturing Cost of excisable goods.

Scope

This standard should be applied to cost statements which require classification, measurement, assignment, presentation and disclosure of Manufacturing Cost of excisable goods.

Cost statements/Reconciliation/Integration/Item excluded from cost and normal and abnormal item

10. The Profit & loss A/c of ABC ltd for the year ended 31st March, 2018 was as follows

Profit & Loss A/c For the year ended 31st March, 2018

Particulars	Amount(₹)	Particulars	Amount(₹)
To Materials	7,20,000	By Sales @ 135	14,40,000
To Wages	5,40,000	By Work in Progress	
To Direct Expenses	3,60,000	Material	45,000
To Gross Profit	1,80,000	Wages	27,000
		Direct Expenses	18,000
		By Closing Stock	2,70,000
	18,00,000		18,00,000
To Administration Expenses	90,000	By Gross Profit	1,80,000
To Net Profit	99,000	By Dividend Received	9,000
	1,89,000		1,89,000

As per the Cost records, the direct expenses have been estimated at a cost ₹30 per unit and administration expenses at ₹15 per unit. During the year production was 9,000 units and sales were ₹12,00,0000.

Prepare a statement of Costing Profit & Loss A/C and Reconcile the profit with financial profit.

Answer:

Statement of Profit as per Cost Accounts

	Particulars	₹
1	Direct Material	7,20,000
2	Direct Material	5,40,000
3	Prime Cost(1+2)	12,60,000
4	Factory Overhead (9,000 Units X 30)	2,70,000
5	Gross factory Cost (3+4)	15,30,000
6	Work In progress(	90,000
7	Factory Cost(5-6)	14,40,000
8	Office Overhead(17X9,000)	1,35,000
9	Cost of Production (9,000 Units)	15,75,000
10	Closing Stock of 1,000 units(working Note)	2,70,000
11	Cost of goods sold(9-10)	13,05,000
12	Profit(Balance Figure)	1,35,000
13	Sales	14,40,000

Calculation of Closing stock	
Sales	14,40,000
less: Gross Profit	1,80,000
Cost of sales	12,60,000
Add: Closing Stock	2,70,000
Add: Work -in-Progress	90,000
Cost of Produced	16,20,000

Cost per unit $= \frac{16,20,000}{9,000} =$ ₹ 180 Unit of closing stock= $\frac{2,70,000}{1,500}$ =1,500 units

Profit as per Costing Profit And loss Account	1,35,000
Add: Over recovery Adm. overhead	45,000
Add: Dividend Income	9,000
	1,89,000
Less: Under recovery factory overhead	90,000
Profit as per Financial Account	99,000

11. Journalize the following transactions assuming that cost and financial accounts are integrated.

Particulars	**₹**
Raw material purchased	**45,000**
Direct materials issued to production	**33,000**
Wages paid (30% indirect)	**36,000**
Wages charged to production	**25,200**
Manufacturing expenses incurred	**20,000**
Manufacturing overhead charged to Production	**18,500**
Selling and distribution cost	**4,000**
Finished products (at cost)	**50,000**
Sales	**60,000**
Closing stock	**Nil**
Receipts from debtors	**23,800**
Payments to creditors	**14,000**

Answer:

		₹	₹
Material Control A/c	Dr	45,000	
To, Creditors A/c			45,000
Work In Progress Control A/c	Dr	33,000	
To, Material Control A/c			33,000
Wages Control A/c	Dr	36,000	
To, Cash A/c			36,000
Factory Overheads Control A/c	Dr	10,800	
To, Wages Control A/c			10,800
Work-in-Progress Control A/c	Dr	25,200	
To, Wages Control A/c			25,200
Factory Overhead Control A/c	Dr	20,000	
To, Cash A/c			20,000
Work-in-Progress Control A/c	Dr	18,500	
To, Factory overhead Control A/c			18,500
S & D O.H. Control A/c	Dr	4,000	
To, Cash A/c			4,000
Cost of Sales A/c	Dr	4,000	
To, Selling & Distribution Overhead Control A/c			4,000
Finished Goods Control A/c	Dr	50,000	
To, Work-in-progress control A/c			50,000
Debtors A/c	Dr	60,000	
To, Profit & Loss A/c			60,000
Cash A/c	Dr	23,800	
To, Debtors A/c			23,800
Creditors A/c	Dr	14,000	
To, Cash A/c			14,000

Job Costing

13. In a factory following the Job Costing Method, an abstract from the work in process as at 31st March, was prepared as under.

Job No	Material	Direct Labour	Factory Overhead Applied
215	1590	400 hrs 800	640
222	972	250 hrs 500	400
230	918	300 hrs 475	380
	3,480	1,775	1,420

Materials used in April were as follows:

Material requisitions No.	Job no.	Cost
44	222	360
45	222	510
46	222	618
47	230	798
48	231	1092
49	233	864

A summary of Labour Hours deployed during April is as follows

Job No	Shop A	Shop B
215	25	25
222	90	30
230	75	10
231	65	-
233	20	1
	275	66
Indirect Labour		
Waiting for material	20	10
Machine breakdown	10	5
Idle time	5	6
Overtime premium	6	5
	316	92

A shop credit slip was issued in October, that material issued under requisition No.44 was returned back to stores as being not suitable. A material transfer note issued in October indicated that material issued under requisition No.45 for Job 222 was directed to Job 23.

The hourly rate in shop X per labour hour is ₹3 while at shop Y it is₹ 2 per hour. The factory overhead is applied at the same rate as in April; Jobs 215, 222 and 230 were completed in October.

You are asked to compute the factory cost of the completed jobs. It is practice of the management to put a 10% on the factory cost to cover administration and selling overheads and invoice the job to the customer on a total cost plus 20% basis what would be the invoice price of these three jobs?

Answer:

Calculation of Selling price of the Job

Job No	215	222	230
	₹	₹	₹
Material	1590	972	918
Labour	800	500	475
Overhead	640	400	380
Total(A)	3030	1872	1773
Cost in April			
Material		618	798
Labour			
(25x3)+(25X2)	125		
(90X3)+(30X2)		330	
(75X3)+(10X2)			245
Overheads (80%)	100	264	196
Total(B)	225	1212	1239
Total Factory Cost(A+B)	3255	3084	3012
Add: Admin Overheads-10%	325.5	308.4	301.2
	3580.5	3392.4	3313.2
Profit	716.1	678.48	662.64
Selling Price	4296.6	4070.88	3975.84

14. The data pertaining to Heavy Engineering Ltd. using are as follows at the end of 31.3.2017. Direct material ₹8,10,000; Direct wages ₹6,75,000; Selling and distribution overhead ₹4,72,500; Administrative overhead ₹3,78,000 Factory overhead ₹4,05,000 and Profit ₹5,48,100.

(a) Prepare a cost sheet showing all the details.

(b) For 2012-13, the factory has received a work order. It is estimated that the direct materials would be ₹10,80,000 and direct labour cost ₹6,75,000. What would be the price of work order if the factory intends to earn the same rate of profit on sales, assuming that the selling and distribution overhead has gone up by 15%? The factory recovers factory overhead as a percentage of direct wages and administrative and selling and

distribution overheads as a percentage of works cost, based on the cost rates prevalent in the previous year.

Answer:

Statement of Cost & Profit

Particulars	₹
Direct Material	8,10,000
Direct Wages	6,75,000
Prime cost	14,85,000
Factory Overheads (60%)	4,05,000
Works Cost	18,90,000
Administration Overheads(20% works cost)	3,78,000
Cost of Production	22,68,000
Selling & Distribution Overheads(25% works cost)	4,72,500
Cost of Sales	27,40,500
Profit(1/5 of Cost)	5,48,100
Sales	32,88,600

Estimated price of work order

Particulars	₹
Direct Material	10,80,000
Direct Wages	6,75,000
Prime cost	17,55,000
Factory Overheads (60%)	4,05,000
Works Cost	21,60,000
Administration Overheads(20% works cost)	4,32,000
Cost of Production	25,92,000
Selling & Distribution Overheads(40% works cost)	8,64,000
Cost of Sales	34,56,000
Profit(1/5 of Cost)	6,91,200
Sales	41,47,200

Process Costing

15. CG Ltd. is engaged in process Engineering Industry. During the month of April, 2015, 3,000 units were introduced in Process 'X'. The normal loss was estimated at 5% of input. At the end of the month 2,100 units had been produced and transferred to process Y. 690 units incomplete and 210 units after passing through fully the entire process had to be scrapped. The incomplete units had reached the following stage of completion.

Material	**75% completed**
Labour	**50% completed**
Overhead	**50% completed**

Following are the further information on the Process 'X'

Cost of the 3,500 units	**₹87,000**
Additional Direct Material	**₹21,600**
Direct Labour	**₹50,100**
Direct Overhead	**₹25,050**

Units scrapped realized 15 each. Prepare Statement of Equivalent Production. Statement of Cost, Statement of Evaluation and Process X Account.

Answer:

Statement of Equivalent Production

Input	Output	Unit	Material		Labour		Overhead	
			%	Unit	%	Unit	%	Unit
3000	Normal Loss	150						
	Closing Stock	690	80	552	50	345	50	345
	Finished Units	2100	100	2100	100	2100	100	2100
	Abnormal Loss	60	100	60	100	60	100	60
3000		3000		2712		2505		2505

Statement of Cost

Particulars	Cost (₹)	Equivalent Units	Cost per nit(₹)
Material (87,000+21,600)-1,500	1,07,100	2712	39.49
Labour	50,100	2505	20
Overhead	25,050	2505	10

Value of Abnormal Loss

Element	Units	Cost Per Unit(₹)	Total Cost(₹)
Material	60	39.49	2,369.40
Labour	60	20	1,200
Overhead	60	10	600
			4,169.40

Value of Closing Stock

Element	Units	Cost Per Unit(₹)	Total Cost(₹)
Material	552	39.49	21,798.48

Labour	345	20	6,900.00
Overhead	345	10	3,450.00
			32,148.48

Process 'X' Account

Particulars	Units	(₹)	Particulars	Units	(₹)
To, Material introduced	3,000	87,000	By, Normal Loss	150	1,500
To, Additional Material		21,600	By, Abnormal Loss	60	4,169.40
To, Labour		50,100	By, Closing Stock	690	32,148.48
			By, Transfer to Next process		
To, Overhead		25,050	@₹69.49 per unit	2,100	1,45,932.12
	3,000	183,750		3000	1,83,750

Joint Product and By Product

16. In the course of manufacture of the main product 'P' by products 'A' and 'B' also emerge. The joint expenses of manufacture amount to ₹1,19,550. All the three products are processed further after separation and sold as per details given below:

	Main Product	**By Product**	
	A	**X**	**Y**
Sales	**1,35,000**	**90,000**	**60,000**
Cost incurred After separation	**9,000**	**7,500**	**6,000**
Profit as % on sales	**25**	**20**	**15**

Total fixed selling expenses are 10% of total cost of sales which are apportioned to the three products in the ratio of 20 : 40 : 40.

(a) Prepare a statement showing the apportionment of joint costs to the main product and the two by products.

(b) If the by-product X is not subjected to further processing and is sold the point of separation for which there is a market, at ₹93,600 without incurring any selling expenses. Would you advise its disposal at this stage. Show the workings.

Answer:

(a) Statement showing computation of share of joint expenses

	Particulars	Main Product A	By Product X	By Product Y	Total
		₹	₹	₹	₹
1	Sales	1,35,000	90,000	60,000	2,85,000
2	Profit	33,750	18,000	9,000	60,750

3	Cost of Sales (1-2)	1,01,250	72,000	51,000	2,24,250
4	Selling Expenses	4,485	8,970	8,970	22,425
5	Manufacturing Cost(3-4)	96,765	63,030	42,030	2,01,825
6	Separate Costs	9,000	7,500	6000	22,500
7	Share of Joint Expenses (5-7)	87,765	55,530	36,030	179,325

	₹
Sales at split off(X)	= 93,600
(-)Joint Cost (X)	= 55,530
	= 38,070

(b) It is better to sell By-Product 'X' at split off point because it gives more profit ₹ 38,070 against profit after processing ₹18,000.

Operating Costing

17. Union Transport Company supplies the following details in respect of a truck of 8 tonne capacity

Cost of Truck	**₹1,80,000**
Estimated Life	**10 years**
Diesel, Oil, Grease	**₹20 per trip each way**
Repairs and maintenance	**₹1,130p.m**
Driver's wages	**₹700 p.m**
Cleaner's wages	**₹450 p.m**
Insurance	**₹9,600 per year**
Tax	**₹4,800 per year**
General supervision charges	**₹6,000 per year**

The truck carries goods to and from the city covering a distance of 60 kms. each way.
On outward trip freight is available to the extent of full capacity and on return 20% of capacity.

Assuming that the truck runs on an average 25 days a month, work out:
(a) Operating cost tonne-km.
(b) Rate for tonne per trip that the company should charge if a profit of 50% on freight is to be earned.

Answer:

Particulars	Amount(₹)
Repairs and Maintenance	1,130

Driver's wages	700
Cleaner's wages	450
Insurance	800
Tax	400
General supervision charges	500
Depreciation	1,500
Diesel, Oil, Grease	1,000
Total Cost per Month(A)	6,480
Tonne Kms =25[(60x8)+(20/100x60x8)] (B)	14,400
Cost Per Tonne km (C)=(A/B)	0.45
50 %Profit on freight (100 % on cost)(D)	0.45
Rate per Tonne km	0.90

18. A Primary School has a total students consisting of 5 section with 30 students per section. The school plans for outing around the city during the weekend. A private transport operator has come forward to hire the buses for taking the students. Each bus will have a maximum capacity of 50 (excluding 2seats reserved for teachers accompanying the students).The school will employ two teachers for each bus, paying them an allowance of ₹150 per teacher. The operator will hire out the required number of buses. The following are the other cost estimates:

Break Fast	**₹12 per Student**
Lunch	**₹24 per Student**
Tea	**₹5 per Student**
Entrance fee at zoo	**₹5 per Student**
Rent per bus	**2,600**
Special permit fees	**₹200 per bus**
Block entrance fees at planetarium	**₹600**
Prizes to student for games	**₹400**

No cost are incurred in respect of accompanying teachers (except allowance of 100 per teacher)

You are required to prepare a statement showing total cost also average cost per student for the levels of 30,60,90,120,150 students.

Answer:

Statement of Variable Cost

Student	30	60	90	120	150
Breakfast @12/student	360	720	1080	1440	1800
Lunch @24/student	720	1440	2160	2880	3600
Tea @ 5/student	150	300	450	600	750

Entrance fee @ 5/student	150	300	450	600	750
Total	1380	2760	4140	5520	6900

Statement of Semi Variable cost

Student	30	60	90	120	150
Rent of Bus	2,600	5,200	7,800	10,400	13,000
Permit Fees	200	400	600	800	1,000
Allowance to teacher	300	600	600	1200	1200
Total	3,100	6,200	9,000	12,400	15,200

Statement of Fixed Cost

Student	30	60	90	120	150
Block entrance fees at planetarium	600	600	600	600	600
Prizes to student for games	400	400	400	400	400
Total	1,000	1,000	1,000	1,000	1,000

Statement of cost per Student

Student(A)	30	60	90	120	150
Total Variable Cost	1,380	2,760	4,140	5,520	6,900
Total Semi Variable Cost	3,100	6,200	9,000	12,400	15,200
Total Fixed Cost	1,000	1,000	1,000	1,000	1,000
Total Cost(B)	5,480	9,960	14,140	18,920	23,100
Average cost (A/B)	182.67	166.00	157.11	157.67	154.00

Contract Costing

19. XYZ limited undertook a contract for 6,25,000 on 1st July, 2016. On 30th June 2017 when the accounts were closed, the following details about the contract were gathered

Particulars	₹
Material Purchased	**1,25,000**
Wages paid	**56,250**
General expenses	**15,000**
Plant purchases	**25,000**
Materials on hand 30-6-2017	**31,250**
Wages accrued 30-6-2017	**6,250**
work certified	**2,50,000**
Cash received	**1,875,00**

Depreciation of Plant	**5,000**
Work uncertified	**18,750**

The above contract contained an escalator clause which read as follows:
"In the event of prices of materials and rates of wages increase by more than 5% the contract price would be increased accordingly by 25% of the rise in the cost of materials and wages beyond 5% in each case".
It was found that since the date of signing the agreement the prices of materials and wage rates increased by 25% the value of the work certify does not take into account the effect of the above clause. Prepare the contract account. Working should form part of the answer.

Answer:

Cost of material & wages incurred = ₹ (1,25,000+56,250+6,250-31,250) = ₹1,56,250
Cost of material &wages before increase in prices = ₹ (1,56,250x100/125)=1,25,000
Increase in contract price = 25/100[1,56,250 - (1,25,000x105/100)] = ₹6,250

Dr. Contract Account **Cr.**

Particulars	Amount(₹)	Particulars		Amount(₹)
To, Material Purchased A/c	1,25,000	By, Material on hand		31,250
To, Wages A/c	62,500	Work certified	2,56,250	
To, General Expenses A/c	15,000	Work uncertified	18,750	
To, Depreciation on Plant	5,000			2,75,000
To, Balance (Notional profit)c/d	98,750			
	3,06,250			3,06,250
To Profit & loss A/c		By Balance b/d		98,750
1/3(98,750x1,87,500/2,56,250)	24,085			
To Reserve c/d	74,665			
	98,750			98,750

20. The following is the Trial Balance of PN Construction Company, engaged on the execution of contract No.47, for the year ended 31st December, 2018

Contractee Account	**(₹)**	**(₹)**
Amount Received		**3,60,000**
Building	**1,92,000**	
Creditor		**86,400**
Bank Balance	**42,000**	
Capital Account		**6,00,000**
Materials	**2,40,000**	
Wages	**2,16,000**	
Expenses	**56,400**	
Plant	**3,00,000**	

The work on Contract No.47 was commenced on 1st January, 2017 materials costing ₹2,04,000 were sent to the site of the contract but those of 7,200 were destroyed in an accident. Wages of ₹ 2,16,000 were paid during the year. Plant with a cost of 2.4 lakhs was used from 1st January to 30th September and was then returned to the stores. Materials of the cost of ₹4,800 were at site on 31st December, 2017.

The contract was for ₹7,20,000 and the contractee pays 75% of the work certified. Work certified was 80% of the total contract work at the end of 2017. Uncertified work was estimated at ₹ 15,000 on 31st December, 2015.Expenses are charged to the contract at 25% of wages. Plant is to be depreciated at 10% for the entire year.

Answer:

Dr. Contract Account Cr.

Particulars	Amount(₹)	Particulars	Amount(₹)
To, Material A/c	2,04,000	By Costing P& L A/c	7,200
To, Wages A/c	2,16,000	By Material Return	4,800
To, Depreciation		By WIP A/c	
[3,00,000x9/12x10/100]		Work Certified	5,76,000
[60,00x3/12x10/100]	24,000	Work uncertified	18,000
To, Expenses	54,000		
To, P& L A/c	54,000		
To, Reserve A/c	54,000		
	6,06,000		6,06,000

Dr. Profit & Loss Account Cr.

Particulars	Amount(₹)	Particulars	Amount(₹)
To, Contract A/c	7,200	By, Contract A/c	54,000
To, Depreciation on Plant		Profit	
[2,40,000x10%x3/12]	6,000		
To, Expenses(56,400-54,000)	2,400		
to, Net Profit	38,400		
	54,000		54,000

Balance Sheet as on31st Dec, 2017

Liabilities	Amount(₹)	Assets		Amount(₹)
Capital	6,00,000	Building		1,92,000
P& L	38,400	Plant		2,70,000
Creditors	86400	WIP	5,94,000	
		(-)Cash Received	3,60,000	
			2,34,000	
		(-)Reserve	54,000	1,80,000

		Material		40,800
		Bank		42,000
	7,24,800			7,24,800

Marginal Costing

21. A company manufactures a product currently utilizing 80% capacity with a turnover of 40,000 units at a selling price of ₹25 per unit. The variable cost of the product is ₹ 17.5 per unit fixed cost amounts ₹1,87,500 Up to 80% level of output and there will be an additional cost of supervision amounting to ₹ 25,000 beyond that level.

Calculate:

(i) Activity Level (%) at breakeven point

(ii) Number of units to be sold to earn a net income of 10% of sales.

(iii) Activity Level (%) to earn a profit of ₹1,87,500.

Answer:

Capacity utilized 80 %

Turnover at 80% capacity = 40,000 units.

Turnover at 100% capacity = 50,000 units.

Fixed cost ₹1,87,500, Fixed cost at more than ₹2,12,500

Selling price = ₹ 25

Contribution per unit = ₹7.50

PVR = 7.5/25X100 = 30%

(i) $BEP = \frac{Fixedcost}{Contributio/unit} = \frac{1,87,500}{7.5} = 25,000$ unit.

Activity level in % = 25,000/50,000 = 50%

(ii) (a) If fixed cost is ₹1,87,500

Let desired sales be X units

$$Desired\ sales = \frac{Fixedcost + DesiredProfit}{PVR}$$

$$X = \frac{1,87,500 + .10x}{.30}$$

X = ₹9,37,500

Number of units = 9,37,500/25 = 37,500 units

As activity level is less than 40,000 units, hence additional supervision cost will not be applicable.

(b) If fixed cost is ₹1,87,500

Let desired sales be X units

$$Desired\ sales = \frac{Fixedcost + DesiredProfit}{PVR}$$

$$X = \frac{2,12,500 + .10x}{.30}$$

X = ₹10,62,500

Number of units = 10,62,500/25 = 42,500

(iii) Number of units to be sold to earn a profit of ₹1,87,500

$$\text{Number of units} = \frac{1,87,500 + 1,87,500}{7.5} = 50,000 \text{ units}$$

Activity level = 100%

22. The operating statement of a company is as follows:

	₹	₹
Sales(1,00,000 @ 18.75 each)		**18,75,000**
Cost: Variable		
Material	**3,00,000**	
Labour	**4,00,000**	
Overheads	**2,00,000**	
	9,00,000	
	4,00,000	**13,00,000**
		5,75,000

The capacity of the plant is 1.25 lakh units. A customer from U.S.A is desirous of buying 25,000 units at a net price of 12.50 per unit. Advice the producer whether or not offer should be accepted. Will your advice be different, if the customer is local one.

Answer:

Statement showing computation of profit before after accepting the order (in ₹)

Particulars	Present Position(Before accepting)1,00,000	Order Value 25,000	Total (After accepting) 1,25,000
1 Sales	18,75,000	3,12,500	21,87,500
2 Variable Cost			
Material	3,00,000	75,000	3,75,000
Labour	4,00,000	1,00,000	5,00,000
Overheads	2,00,000	50,000	2,50,000
	9,00,000	2,25,000	11,25,000
3 Contribution(1-2)	9,75,000	87,500	10,62,500
4 Fixed Cost	4,00,000	---	4,00,000
5 Profit	5,75,000	87,500	6,62,500

23. Present the following information to show to management

(i) The marginal product cost and contribution p.u.

(ii) The total contribution and profits resulting from each of the following sales mix result

Particulars	Product	Per Unit (₹)
Direct Material	**X**	**20**
Direct Material	**Y**	**18**
Direct Wages	**X**	**6**
Direct Wages	**Y**	**4**

Fixed Expenses - ₹1,600 & (Variable expenses are allotted to product at 100% Direct Wages)
Sales Price – X- 40 Sales Price – Y- 30
Sales Mixtures: (a) 100 units of product X and 200 of Y
(b) 150 units of product X and 150 of Y
(c) 150 units of product X and 150 of Y

Answer:

Statement Marginal product Cost & Contribution p.u.

Sr. No.	Selling Price	X	Y
1	Selling Price	40	30
2	Variable Cost		
	Direct Material	20	18
	Direct Wages	6	4
	Variable Expenses	6	4
		32	26
3	Contribution (1-2)	8	4

Statement Showing Sales Mixture

Sr. No	Particulars	Sales Mix(a)			Sales Mix(b)			Sales Mix(c)		
		X	Y	Total	X	Y	Total	X	Y	Total
1	No of units	100	200		150	150		200	100	
2	Contribution per unit	8	4		8	4		8	4	
3	Total Contribution (1X2)	800	800	1,600	1200	600	1,800	1600	400	2,000
4	Fixed Cost			1,600			1,600			1,600
5	Profit			Nil			200			400

24. The following results of a company for the last two years are as follows:

Year	Sales(₹)	Profit(₹)
2017	3,00,000	30,000
2018	3,80,000	50,000

You are required to calculate:

(i) P/V Ratio

(ii) B.E.P

(iii) The Sales required to earn a profit of 50,000

(iv) Profit when sales are 8,00,000

(v) Margin of safety at a profit of ₹ 50,000

(vi) Variable costs of two periods.

Answer:

(i) P/V ratio = (Change in profit/Change in sales) × 100
= (20,000/80,000)×100 = 25%

(ii) Fixed Cost = (Sales X P/V ratio)-Profit
= (3,00,000 × 25%)-30,000 = ₹45,000
Break Even Sales = Fixed Cost/PV ratio = ₹45,000/25% = ₹1,80,000

(iii) Sales required to earn a profit of ₹50,000 = $\frac{\text{Fixedcost} + \text{Desiredprofit}}{\text{P / VRatio}}$ = ₹9,20,000

(iv) Profit at sales ₹5,00,000 = (Sales × P/V ratio)-Fixed Cost = 2,00,000-1,80,000 = ₹20,000

(v) Margin of Safety at profit of 50,000 = profit/PV ratio = 50,000/25% = ₹2,00,000

(vi) Variable cost for 2017 = 3,00,000 × 75%) = ₹2,25,000
Variable cost for 2018=(3,80,000 × 75%) = ₹2,85,000

25. Hotel Seven Star has annual fixed costs applicable to rooms of ₹ 18,00,000 for a rent a 360 rooms hotel with average daily room rates 480 and average variable costs ₹ 72 for each room rented. The Hotel operates 365 days per year. It is subject to an income tax rate of 30%.You are required to:

(i) Calculate the number of rooms the Hotel must rent to earn a net income after taxes of ₹12,00,000

(ii) Compute the break-even point in terms of rooms rented.

Answer:

(i)

Suppose Income before tax	100
Less :Income Tax	30
Income after Tax	70

Income before tax corresponding to 12,00,000 income after tax=(100/70)×12,00,000 = ₹17,14,286

Fixed Cost per annum	₹18,00,000
Add: Income before Tax	₹17,14,286
Total Desired Contribution	₹35,14,286

Daily Contribution per room day = (480-72) = ₹402
Total Sales Value = Total desired contribution/PV ratio
= 35,14,286/(402/480)= ₹29,43,215

No of rooms days = 29,43,215/480 = 6,136 (Approx)
The Hotel must rent out 16.81 rooms per day (6,136/365days) to derive a total contribution of ₹35,14,571, this will give the Hotel after tax profit of ₹ 12,00,000.

(ii) B.E Sales = Fixed Cost/Daily Contribution per room =18,00,000/402 = ₹4,478(approx)

26. The following Miscellaneous information regarding the operations of 2017 has been available from the Record of GS Corporation.

	₹
Sales	**1,20,000**
Direct Materials used	**48,000**
Direct Labour	**18,000**
Fixed Manufacturing Overhead	**24,000**
Fixed Selling and Administration Expenses	**12,000**
Gross Profit	**24,000**
Net Loss	**6,000**

There are no beginning or ending inventories. You are required to Calculate:

(i) Variable Selling and Administration Expenses
(ii) Factory Cost of Goods Sold
(iii) Variable Factory Overhead
(iv) Contribution of Margin in rupees
(v) Break-Even Point in rupee sales

Answer:

(i) Net Loss = Gross profit - Fixed Selling and Administration – Variable Selling & Administration Expenses
Or,(6,000) = 24,000-12,000- Variable Selling & Administration Expenses
Variable Selling & Administration Expenses = ₹ 18,000

(ii) Cost of goods sold = Sales - Gross profit =1,20,000 – 24,000 = ₹ 96,000

(iii) Cost of Goods Sold = Direct Material Used + Direct Labour + Fixed Manufacturing Overhead + Variable Manufacturing Overhead
Or,96,000 = 48,000+18,000+24,000+Variable Manufacturing Overhead
Variable Manufacturing Overhead = ₹ 6,000

(iv) Contribution = Sales-Variable Costs =1,20,000-(48,000+18,000+18,000+6,000) = ₹ 30,000

(v) BEP(in ₹) = Fixed cost/PV ratio = $\frac{24,000+12,000}{30,000/1,20,000} \times 100$ = ₹ 1,44,000

Standard Costing & Variance Analysis

27. The standard set for material consumption was 100 kg @ ₹ 3.25 per unit.
In a cost period:
Opening stock was 100 kg @ ₹ 3.25 per unit.
Purchases made 500 kg @ ₹ 3.15 per unit.
Consumption 110units

Calculate: a)Usage Variance b)Price Variance

1) **When variance is calculated at point of purchase**
2) **When variance is calculated at point of issue on FIFO basis**
3) **When variance is calculated at point of issue on LIFO**

Answer:

a) Computation of Material Usage Variance
Material Usage Variance = SQSP – AQSP
= SP (SQ – AQ)
= 3.25(100-110)
= ₹32.50 (A)

b) Computation of Price variance:

1) When Variance is calculated at the point of purchase:

Price variance = AQSP – AQAP

= (110 x 3.25) – (110 x 3.15)

= ₹ 11 (F)

2) When variance is calculated at the point of issue on FIFO basis

Price variance = AQSP – AQAP

= (110 x3.25) – ([100 x 3.25]+[10 x 3.15])

= ₹1 (F)

3) When variance is calculated at the point of issue on LIFO basis

Price variance = AQSP – AQAP

= (110 x 3.25) – (110 x 3.15)

= 357.50- 346.5

= ₹11 (F)

28. The Standard labour complement and the actual complement engaged in a week for a job are as under:

Particulars	**Skilled workers**	**Semi Skilled Worker**	**Unskilled workers**
a) Standard no. of workers in the group	**64**	**24**	**12**
b) Standard wage rate per hour	**6**	**4**	**2**
c) Actual no. of workers employed in the group during the week	**56**	**36**	**8**
d)Actual wage rate per hour	**8**	**6**	**4**

During the 40 hour working week the group produced 3,600 standard labour hours of work. Calculate

1)Labour Efficiency Variance	**2) Mix Variance**	**3)Efficiency Variance**
4)Labour Rate Variance	**5)Labour Cost Variance**	

Answer:

Analysis of Given Data

	Standard Data			Actual Data		
	Hours	Rate	Value	Hours	Rate	Value
Skilled	64X40=2,560	6	15,360	56X40=2,2240	8	17,920
Semi Skilled	24X40=960	4	3,840	36X40=1440	6	8,640
Unskilled	12X40=480	2	960	8X40=320	4	1,280
	4,000		20,160	4,000		27,840

Computation of Required Values

	SRSH(1)(₹)	SRESH(2)(₹)	SRAH(3)(₹)	ARAH(4)(₹)
Skilled	6X2,304=13,824	15,360	2,240X6=13,440	17,920
Semi Skilled	4X864=3,456	3,840	1,440X4=5,760	8,640
Un Skilled	2X432=864	960	320X2=640	1,280
	18,144	20,160	19,840	27,840

SH = (SH for that worker/SH for all the worker) × AQ for that worker
For Skilled worker)=(2,560/4,000)×3,600=2,304
For Semi Skilled=(960/4,000)×3.600=864
For Unskilled=(480/4,000)×3,600=432
Computation of Labour Variances:

1. Labour sub Efficiency Variance=(1)-(2)=(18,144-20,160)=2,016(A)
2. Labour Mix Variance=(2)-(3)=(20,160-19,840)=320(F)
3. Labour Efficiency Variance=(1)-(3)=(18,144-19,840)=1,696(A)
4. Labour Rate Variance=(3)-(4)=(19,840-27,840)=8,000(A)
5. Labour Cost Variance=(1)-(4)=18,144-27,840=9,696(A)

Budget & Budgetary Control

29. The monthly budget for manufacturing overhead of a concern for two levels of activity were as follows:

Capacity	50%	90%
Budgeted Production(units)	**1,000**	**1,800**
Wages	**1,000**	**1,800**
Consumable Stores	**750**	**1,350**
Maintenance	**900**	**1,500**
Power and Fuel	**1,600**	**2,000**
Depreciation	**5,000**	**5,000**
Insurance	**2,000**	**2,000**

You are required to:

(i) Indicate which of the items are fixed, variable and semi variable;

(ii) Find the total cost, both fixed and variable per unit of output at 60%, 80% and 100% capacity

Answer:

(i) Fixed--Depreciation, Insurance
Variable — Wages, Consumable stores
Semi- Variable –Maintenance, Power and Fuel

Maintenance =	Variable	(1500-900)/800=0.75 per unit and
	Fixed	=900-(1,000-750)=150 per unit
Power and Fuel=	Variable	(2,000-1,600)/800=0.25 per unit and
	Fixed	=1,600-(1,000*.25)=1,350 per unit

(ii)

Capacity	60%(1,200 units)		80%(1,600 units)		100%(2,000 units)	
	Total	Per Unit	Total	Per Unit	Total	Per Unit
Fixed Cost						
Depreciation	5,000		5,000		5,000	
Insurance	2,000		2,000		2,000	
Maintenance	150		150		150	
Power & Fuel	1,350		1,350		1,350	
Total Fixed Cost(A)	8,500	7.08	8,500	5.31	8,500	4.25
Variable Cost						
Wages @ 1 per Unit	1,200		1,600		2,000	
Consumable stores @	2,400		3,200		4,000	
Maintenance	900		1,200		1,500	
Power and Fuel	300		400		500	
Total Variable cost (B)	4,800	4.00	6,400	4.00	8,000	4.00
Total Cost(A+B)	13,300	11.08	14,900	9.31	16,500	8.25

30. Short Notes

(a) Difference between Financial Accounting & Management Accounting

(b) Advantages of Marginal Costing (Any five)

(c) Performance Budgeting

(d) Features of Process Costing

(e) Difference between Merit Rating and Job Evaluation.

Answer:

(a) Differences between Financial Accounting & Management Accounting

Sl. No.	Financial Accounting	Management Accounting
(i)	Provides general business information like P&L account, Balance Sheet	Specific information relating to specific problems and decision making.
(ii)	Information for owners and outside parties	Information is for management for optimizing decisions.
(iii)	Importance is on recording rather than control	Emphasis is on control like using details of materials, labour, etc for standard costing, budgetary control.
(iv)	All commercial transactions between the business and external parties are recorded.	Concerned with Internal transaction not involving payment or receipt

(v)	Only those transactions that can be measured in monetary terms are recorded.	Other parameters like cost units, apportioning bases are also recorded.
(vi)	Efficiency of resource utilization men/ materials or machine is not available	Available for corrective action.
(vii)	Stocks are valued at cost or market value, whichever is lower.	Always valued at cost.
(viii)	Records are maintained as per Companies Act and as per Income Tax Act	Records are maintained as per Companies Act only in certain cases, that too as per Cost Accounting requirements, but mainly to suit

(b) Advantages of Marginal Costing:

1. Marginal costing system is simple to operate than absorption costing because they do not involve the problems of overhead apportionment and recovery.
2. Marginal costing avoids, the difficulties of having to explain the purpose and basis of overhead absorption to management that accompany absorption costing. Fluctuations in profit are easier to explain because they result from cost volume interactions and not from changes in inventory valuation.
3. It is easier to make decisions on the basis of marginal cost presentations, e.g., marginal costing shows which products are making a contribution and which are failing to cover their avoidable (i.e., variable) costs. Under absorption costing the relevant information is difficult to gather, and there is the added danger that management may be misled by reliance on unit costs that contain an element of fixed cost.
4. Marginal costing is essentially useful to management as a technique in cost analysis and cost presentation. It enables the presentation of data in a manner useful to different levels of management for the purpose of controlling costs. Therefore, it is an important technique in cost control.
5. Future profit planning of the business enterprises can well be carried out by marginal costing. The contribution ratio and marginal cost ratios are very useful to ascertain the changes in selling price, variable cost etc. Thus, marginal costing is greatly helpful in profit planning.
6. When a business concern consists of several units and produces several products and evaluation of performance of such components can well be made with the help of marginal costing.
7. It is helpful in forecasting.
8. When there are different products, the determination of number of units of each product, called Optimum Product Mix, is made with the help of marginal costing.
9. Similarly, optimum sales mix i.e., sales of each and every product to get maximum profit can also be determined with the help of marginal costing.
10. Apart from the above, numerous managerial decisions can be taken with the help of marginal costing, some of which, may be as follows:-
    (a) Make or buy decisions,
    (b) Exploring foreign markets,

(c) Accept an order or not,
(d) Determination of selling price in different conditions,
(e) Replace one product with some other product,
(f) Optimum utilisation of labour or machine hours,
(g) Evaluation of alternative choices,
(h) Subcontract some of the production processes or not,
(i) Expand the business or not,
(j) Diversification,
(k) Shutdown or continue,

(c) Performance Budgeting:

Performance Budgeting is synonymous with Responsibility Accounting which means thus the responsibility of various levels of management is predetermined in terms of output or result keeping in view the authority vested with them. The main concepts of such a system are enumerated below:

(a) It is based on a classification of managerial level for the purpose of establishing a budget for each level. The individual in charge of that level should be made responsible and held accountable for its performance over a given period of time.
(b) The starting point of the performance budgeting system rests with the organisation chart in which the spheres of jurisdiction have been determined. Authority leads to the responsibility for certain costs and expenses which are forecast or present in the budget with the knowledge of the manager concerned.
(c) The costs in each individual's or department's budget should be limited to the cost controllable by him.
(d) The person concerned should have the authority to bear the responsibility

(d) Features of Process Costing:

(i) Production is done having a continuous flow of products having a continuous flow of identical products except where plant and machinery is shut down for repairs etc.
(ii) Clearly defined process cost centres and the accumulation of all costs by the cost centres.
(iii) The maintenance of accurate records of units and part units produced and cost incurred by each process.
(iv) The finished product of one process becomes the raw material of the next process or operation and so on until the final product is obtained.
(v) Avoidable and unavoidable losses usually arise at different stages of manufacture for various reasons.
(vi) In order to obtain accurate average costs, it is necessary to measure the production at various stages of manufacture as all the input units may not be converted into finished goods.
(vii) Different products with or without by-products are simultaneously produced at one or more stages or processes of manufacture. The valuation of by-products and

apportionment of joint cost before joint of separation is an important aspect of this method of costing.

(viii) Output is uniform and all units are exactly identical during one or more processes. So the cost per unit of production can be ascertained only by averaging the expenditure incurred during a particular period.

(e) Difference between the Merit Rating and Job Evaluation are as follows

(a) Job Evaluation is the assessment of the relative worth of jobs within a business enterprise and Merit Rating is the assessment of the employees with respect to a job.

(b Job Evaluation helps in establishing a rational wage and salary structure. On the other hand, Merit Rating helps in fixing fair wages for each worker in terms of his competence and performance.

(c) Job Evaluation brings uniformity in wages and salaries while Merit Rating aims at providing a fair rate of pay for different workers on the basis of their performance.