J.K. SHAH®
CLASSES
CAFC→INTER CA→FINAL CA↗

INTER CA
MAY '19
REVISION NOTES
COSTING

PART - II

/officialjksc Jkshahclasses.com/revision

STANDARD COSTING

Question 1

Calculate the fixed overhead variances from the data given below:

	Budget (Jan to March)	Actual (March)
Output (units)	3,00,000	1,25,000
Hours	3,60,000	1,40,000
Fixed overhead Rs.	36,00,000	14,40,000
Working days	72	25

There were 4,000 hours of abnormal idle time included in actual hours.

Question 2

A gang of workers normally consists of 35 men, 15 women and 10 boys. They are paid at standard hourly rates as:

Men	Re.	0.80
Women	Re.	0.60
Boys	Re.	0.40

In a normal working week of 40 hours, the gang is expected to produce 2,000 units of output. During the week ended 31st December 2016, the gang consisted of 34 men, 12 women and 9 boys. The actual wages paid were @ Re. 0.70, Re. 0.65 and Re. 0.30, respectively. 4 hours were lost due to abnormal idle time and 1,900 units were produced.

Its further provided that for producing the given standard output 4,000 kgs of Material X at Rs. 10 per kg. and 2,000 kgs of Material Y at Rs. 20 per kg should be input whereas the production is completed with 3,800 kgs at Rs. 12 per kg and 2,100 kgs at Rs. 18 per kg respectively.

Variable overheads were expected to be incurred at Rs.10 per hour but actually incurred Rs. 23,760.

You are required to ascertain all possible variances.

Question 3

Compute the missing data indicated by the question marks from the following :

Particulars	A	B
Standard price / unit	₹ 12	₹ 15
Actual price / unit	₹ 15	₹ 20
Standard Input (kgs.)	50	?
Actual Input (kgs.)	?	70
Material Price Variance	?	?
Material Usage Variance	?	₹ 300 A
Material Cost Variance	?	?

Material mix variance for both products together was ₹ 45 adverse.

MARGINAL COSTING

Question 1

Calculate the Break Even Sales, Margin of safety and sales to earn profit of Rs. 240,000 from the following details:

Particulars	Year 1	Year 2
Sales (Rs.)	30.0 Lakhs	36.0 Lakhs
Total Costs (Rs.)	27.0 Lakhs	31.8 Lakhs
Units	100,000	120,000

Question 2

The following set of information is presented to you by your client AB Ltd producing two products X and Y.

		X	Y
1.	Direct materials (per Unit)	Rs. 20	Rs. 18
2.	Direct wages (per unit)	Rs. 6	Rs.4

3. Fixed expenses during the period are expected to be Rs. 1,600/-
4. Variable expenses are allocated to the products at the rate of 100% of Direct wages.
5. Selling price (per unit) X : Rs. 40 Y: Rs. 30
6. Proposed sales mix :-
   i) 100 units of X and 200 units of Y
   ii) 150 units of X and 150 units of Y
   iii) 200 units of X and 100 units of Y

As a cost Accountant you are requested to present to the management of AB Ltd. the following :-

(a) The unit marginal cost and unit contribution.
(b) The total contribution & resultant profit from each of the above sales mix.
(c) The proposed sales mix to earn a profit of Rs.300 and Rs.600 with the total sales of X and Y being 300 units.

Question 3

From the following particulars, find the most profitable product mix and prepare a statement of profitability of that product mix :-

	Product A	Product B	Product C
Units budgeted to be produced & sold	1,800	3,000	1,200
SP(Rs.)	60	55	50
Requirements per unit :-			
Direct Materials	5 kg.	3 kg.	4 kg.
Direct Labour	4 hrs.	3 hrs.	2 hrs.
Variable Overheads	Rs.7	Rs.13	Rs.8
Fixed Overheads	Rs.10	Rs.10	Rs.10
Cost of Direct Materials per kg.	Rs.4	Rs.4	Rs.4
Direct Labour Hour Rate	Rs.2	Rs.2	Rs.2
Maximum Possible Units of Sales	4,000	5,000	1,500

All the three products are produced from the same direct material using the same type of machines and labour. Direct labour, which is the key factor, is limited to 18,600 hours. Also calculate product mix by considering material as a key factor which is limited to 30,000 kgs.

Question 4

Mega Company has just completed its first year of operations. The unit costs on a normal costing basis are as under :

		Rs.
Direct material 4 kg. @ Rs.4	=	16.00
Direct labour 3 hrs @ Rs.18	=	54.00
Variable production overhead 3 hrs @ Rs.4	=	12,00
Fixed production overhead 3 hrs @ Rs.6	=	18,00
		100.00
Selling and administrative costs :		
Variable		Rs.20 per unit
Fixed		Rs.7,60,000
During the year the company has the following activity :		
Units produced	=	24,000
Units sold	=	21,500
Unit selling price	=	Rs.168
Direct labour hours worked	=	72,000

Actual fixed overhead was Rs. 48,000 less than the budgeted fixed overhead. Budgeted variable overhead was Rs. 20,000 less than the actual variable overhead. The company used an expected actual activity level of 72,000 direct labour hours to compute the predetermine overhead rates.

Required :

(i) Compute the unit cost and total income under :
(a) Absorption costing (b) Marginal costing'

(ii) Under or over absorption of overhead

(iii) Reconcile the difference between the total income under absorption and marginal costing.

Question 5

The particulars of two plants producing an identical product with the same selling price are as under:-

	Plant A	**Plant B**
Capacity utilization	70%	60%
	(Rs. Lacs)	(Rs.Lacs)
Sales	150	90
Variable costs	105	75
Fixed costs	30	20

It has been decided to merge plant 'B' with Plant 'A'.
The additional fixed expenses involved in the merger amounts to Rs.2 lacs.

Required :-

1) Find the break-even point of Plant 'A' and Plant 'B' before merger and the break-even point of the merged plant.
2) Find capacity utilization of the merged plant to get an overall profit of Rs. 18 lakhs.

Question 6

Nuksan Ltd. which makes only one product, sold 10,000 units of its product making a loss of ₹ 10,000/-. The variable cost per unit of the product is ₹ 8/- and the fixed cost is ₹ 30,000/-. The company has estimated its sale demand as under :

Sales units	Probability
10,000	0.10
12,000	0.15
14,000	0.20
16,000	0.30
18,000	0.25

(i) What is the probability that the company will continue to make losses.
(ii) What is the probability that the company make a profit of ₹ 6,000/-.
(iii) What is the probability that the company will make the profit of at least ₹ 2,000/-.
(iv) What is the probability that the company will make the profit of at the most ₹ 2,000/-.

Question 7

Ever Forward Ltd. is manufacturing and selling two products : Splash and Flash at selling prices of ₹ 3 and ₹ 4 respectively. The following sales strategy has been outlined for the year 2014.

(i) Sales planned for year will be ₹ 7.20 lakhs in the case of Splash and ₹ 3.50 lakhs in the case of Flash.
(ii) To meet the competition, the selling price of Splash will be reduced by 20% and that of Flash by 12.5%.
(iii) Break-even is planned at 60% of the total sales of each product.
(iv) Profit for the year to be achieved is planned as ₹ 69,120 in the case of Splash and ₹ 17,500 in the case of Flash. This would be possible by launching a cost reduction programme and reducing the present annual fixed expenses of ₹ 1,35,000 allocated as ₹ 108,000 to Splash and ₹ 27,000 to Flash.

You are required to present the proposal in financial terms giving clearly the following information :

(a) Number of units to be sold of Splash and Flash to break even as well as the total number of units of splash and Flash to be sold during the year.
(b) Reduction in fixed expenses product-wise that is envisaged by the Cost Reduction Programme.

MATERIAL COSTING

Question 1

(a) A company uses three raw materials A, B and C for a particular product for which the following data apply :-

Raw Material	Usage per unit of product	Reorder Quantity	Price per Kg.	Deliver period (in weeks)			Reorder level	Minimum level
	(Kgs)	(Kgs.)	(Rs.)	Minimum	Average	Maximum	(Kgs.)	(Kgs.)
A	10	10,000	0.10	1	2	3	8,000	
B	4	5,000	0.30	3	4	5	4,750	
C	6	10,000	0.15	2	3	4		2,000

Weekly production varies from 175 to 225 units, averaging 200 units of the said product. What would be the following quantities :-

(i) Minimum Stock of A ?
(ii) Maximum Stock of B ?
(iii) Re-order level of C ?
(iv) Average stock level of A ?

Question 2

PQR Tubes Ltd. are the manufacturer of picture tubes for T.V. The following are the details of their operations during 2016-2017.

Ordering cost	Rs.100 per order
Inventory carrying cost	20% p.a.
Cost of tubes	Rs.500 per tube
Normal usage	100 tubes per week
Minimum usage	50 tubes per week
Maximum usage	200 tube per week
Lead time to supply	6 – 8 weeks

Required : -

(i) Economic order quantity. If the supplier is willing to supply quarterly 1,500 units at a discount of 5%, is it worth accepting?
(ii) Re-order level
(iii) Maximum level of stock
(iv) Minimum level of stock
(v) Average level of stock

Question 3

A company's monthly requirements of an inventory items is 1,800 units. The cost of processing an order is Rs 5 and the carrying cost per unit is 20 paise per month. The Company's supplier agrees to offer quantity discounts as under:

Lot size (unit)	upto400	401-600	601-800	801-1000	above 1000
Discount (Rs.)	Nil	6	10	15	20

Lead-time is 2 days and the company wishes to keep a safety stock equal to 50% of usage in the lead-time:

(1) Find the economic ordering quantity (EOQ) without considering the offer of discount.
(2) Calculate re-order points taking 30 working days in a month.
(3) Tabulate different types of cost as also effect of discount on the difference order sizes taking 1,2,3…7 orders a month and indicate the EOQ.

Question 4

The particulars relating to the import of Sealing Ring made by AB & Co., during December, 2016 are given below:

1. Sealing Ring-1,000 pieces invoiced @ £2.00 C.I.F., Bombay Port.
2. Customs duty was paid @ 100% on Invoice Value (which was converted to Indian currency by adopting an exchange rate of Rs.90 per£
3. Clearing charges-Rs. 18,000 for the entire consignment, and
4. Freight charges-Rs. 14,000 for transporting the consignment from Bombay Port to factory premises.

It was found on inspection that 100 pieces of the above material were broken and, therefore, rejected. There is no scrap value for the rejected part No refund for the broken material would be admissible as per the terms of contract. The Management decided to treat 60 pieces as normal loss and the rest 40 pieces as abnormal loss. The entire quantity of 900 pieces was issued to production.

Calculate:

(a) Total cost of material, and
(b) Unit cost of material issued to production.

Question 5

ABC Ltd. distributes wide range of Water purifier systems. One of its best selling items is a standard water purifier. The management of ABC Ltd. uses the EOQ decision model to determine optimal number of standard water purifiers to order. Management now wants to determine how much safety stock to hold.

ABC Ltd. estimates annual demand (360 working days) to be 36,000 standard water purifiers. Using the EOQ decision model, the company orders 3,600 standard water purifiers at a time. The lead-time for an order is 6 days. The annual carrying cost of one standard purifier is Rs. 450. Management has also estimated the additional stock out costs would be Rs. 900 for shortage of each standard water purifier.

ABC Ltd. has analysed the demand during 200 past re-order periods. The records indicate the following patterns:

Demand during lead time	Number of times quantity was demanded
540	6
560	12
580	16
600	130
620	20
640	10
660	6

1. Determine the level of safety stock for standard water purifier that the ABC Ltd. should maintain in order to minimize expected stock out costs and carrying costs. When computing carrying costs, assume that the safety stock is on hand at all times and that there is no overstocking caused by decrease in expected demand (consider safety stock levels of 0, 20, 40 and 60 units).
2. What would be the ABC Ltd.'s new re-order point?

Question 6

The quarterly production of a company's product which has a steady market is 20,000 units. Each unit of a product requires 0.5 kg. of raw material. The cost of placing one order of raw material is Rs. 100 and the inventory carrying cost is Rs. 2 per annum. The lead time for procurement of raw material is 36 days and a safety stack of 1,000 kg. of raw materials is

maintained by the company. The company has been able to negotiate the following discount structure with the raw material supplier.

Order quantity (kgs.)	Discount (Rs.)
Upto 6,000	Nil
6,000-8,000	400
8,000-16,000	2,000
16,000-30,000	3,200
30,000-45,000	4,000

You are required to:

1. Calculate the re-order point taking 30 days in a month.
2. Prepare a statement showing the total cost of procurement and storage of raw material after considering the discount of the company elects to place one, two, four or six orders in the year.
3. Find out no. of orders to minimise the total cost from the options given above.

Question 7

Shriram Enterprises manufactures a special products ZED. The following particulars were collected for the year 2016 :

(A) Monthly demand for ZED - 1,000 units
(B) Cost of placing an order ₹ 100/-
(C) Annual carrying cost per unit ₹ 15/-
(D) Normal usage 50 unit per week
(E) Minimum usage 25 units per week
(F) Maximum usage 75 units per week
(G) Re-order period 4 - 6 weeks

Compute from the above :

(a) Re-order quantity (b) Re-order level (c) Minimum level
(d) Maximum level (e) Average stock level

LABOUR COSTING

Question 1

It is seen from the job card for repair of the customer's equipment that a total of 154 labour hours have been put in a as detailed below:

	Worker 'A' paid at Rs. 20 per day of 8 hours	Worker 'B' paid at Re. 10 per day of 8 hours	Supervisory Worker 'C' paid at Rs. 30 per day of 8 hours
Monday	10 – ½ hours	8 hours	10 – ½ hours
Tuesday	8 hours	8 hours	8 hours
Wednesday	10 – ½ hours	8 hours	10 – ½ hours
Thursday	9 – ½ hours	8 hours	9 – ½ hours
Friday	10 – ½ hours	8 hours	10 – ½ hours
Saturday	----	8 hours	8 hours
Total	49 hours	48 hours	57 hours

Sunday is a weekly holiday and each worker has to work for 8 hours on all week days and 4 hours on Saturdays; the worker are however paid full wages for Saturday (8 hours for 4 hours worked.)

Workers are paid overtime according to the Factories Act for hours worked in excess of normal working hours on each day. Work out the wages payable to each worker.

Question 2

Calculate the earnings of A and B from the following particulars for a month and allocate the labour cost to each job X, Y and Z:

		A	B
(i)	Basic Wages (Rs.)	1,000	1,600
(ii)	Dearness Allowance	50%	50%
(iii)	Contribution to Provident Fund (on basic wages)	8%	8%
(iv)	Contribution to Employees' State Insurance (on basic wages)	2%	2%
(v)	Overtime	Hours 10	

The normal working hours for the month are 200. Overtime is paid at double the total of normal wages and dearness allowance. Employer's contribution to State Insurance and Provident Fund are at equal rates with employees' contributions. The two workers were employed on jobs X, Y and Z in the followings proportions (Overtime was done on Job Y):

Jobs	X	Y	Z
Worker A	40%	30%	30%
Worker B	50%	20%	30%

Question 3

Wage negotiations are going on with the Recognised Labour union and the management wants you as the Cost Accountant of the company to formulate an incentive scheme with a view to increase productivity.

The cases of three typical workers X, Y and Z who produce respectively 180, 120 and 100 units of the company's product in a normal day of 8 hours, are taken up for study.

Assuming that day wages would be guaranteed at Rs.75 per hour and the piece rate would be based on a standard hourly output of 10 units, calculate the earnings of each of the three workers and the labour cost per 100 pieces under:

(i) Day wages, (iii) Halsey scheme and
(ii) Piece rate, (iv) Rowan scheme

Question 4

What will be the earning of a worker at Rs. 2.25 per hour when he takes 130 hours to do a work for which the standard time allowed is 200 hours ? He is entitled to bonus for the time saved of scale as follows:-

(a)	Within the first	10% of saving in standard time, bonus is30% of time saved.
(b)	Within the second	10% of saving in standard time, bonus is40% of time saved.
(c)	Within the third	10% of saving in standard time, bonus is50% of time saved.
(d)	Within the fourth	10% of saving in standard time, bonus is60% of time saved.
(e)	And for the rest	70% of saved time.

Question 5

In a unit, 10 men work as a group. When the production of the group exceeds the standard output of 200 piece per hour, each man is paid an incentive for the excess production in addition to his wages at hourly rates. The incentive is at half the percentage of the excess production over the standard bears to the standard production. Each man is paid an incentive at the rate of his percentage of a wage rate of ₹ 2 per hour. There is no relation between the individual workman's hourly rate and the bonus rate.

Actual hours worked : 500 hrs. & Actual Production 120,000 units .

(a) Compute the total amount of the bonus for the week.

(b) Calculate the total earnings of two workers A and B of the group.

  (i) A worked 44 hours and his basic rate per hour was ₹ 2,20.

  (ii) B worked 48 hours and his basic rate per hour was ₹ 1.90.

Question 6

During the first week of April, 2004, the workman Mr. Kalyan manufactured 300 articles. He receives wages for a guaranteed 48 hours per week at the rate of ₹ 4 per hour. The estimated time to produce one article is 10 minutes and under the incentive scheme, the time allowed is increased by 20%. The incentive takes care of the normal idle time.

Calculate his gross wages according to :

(a) Piece-work system with a guaranteed weekly wages.

(b) Rowan premium bonus.

(c) Halsey premium bonus with 60% to the workman.

Question 7

Mr. A is working by employing 10 skilled workers. He is considering the introduction of some incentive scheme-either Halsey scheme (with 50% bonus) or Rowan scheme of wage payments for increasing the labour productivity to cope with the increased demand for the product by 25%. He feels that if the proposed incentives scheme could bring about an average 20% increase over the present earnings of the workers, it could act as sufficient incentive for them to produce more and he has accordingly given this assurance to the workers.

As a result of this assurance, the increase in productivity has been observed as revealed by the following figures for the current month,

Hourly rate of wages (guaranteed)	₹ 2.00
Average time for producing 1 piece by one worker at the previous performance (This may be taken as time allowed)	2 Hours
No of working days in the month	25
No. of working hours per day for each worker	8
Actual production during the month	

Required :

1. Calculate effective rate of earnings per hour under Halsey scheme and Rowan scheme.
2. Calculate the savings to Mr. A in terms of direct labour cost per piece under the above scheme.
3. Advise Mr. A about the selection of the scheme to fulfil his assurance.

Question 8

In an engineering concern, the employees are paid incentive bonus in addition to their normal wages at hourly rates. Incentive bonus is calculated in proportion of time taken to time allowed, of the time saved. The following details are made available in respect of employees X, Y and Z for a particular week : 1,250 units

Particulars	X	Y	Z
Normal wages (₹ Per hour)	4.00	5.00	6.00
Completed units of production	6,000	3,000	4,800
Time allowed (Per 100 units)	0.8 hr.	1.5 hrs	1hr.
Actual time taken (hours)	42	40	48

You are required to work out for each employee :

(i) The amount of bonus earned.

(ii) The total amount of wages received.

(iii) The total wage cost per 100 units of output.

Question 9

The management of In and Out Ltd. are worried about their increasing labour turnover in the factory and before analysing the causes and taking remedial steps, they want to have an idea of the profit foregone as a result of labour turnover in the last year.

Last year sales amounted to ₹ 83,03,300 and the gross profit (i.e P/V ratios) was 20 per cent. The total number of actual hours worked by the direct labour force was 4.45 lakhs. As a result of the delays by the personnel department in filling the vacancies due to labour turnover, 1,00,000 potentially productive hours were lost. The actual direct labour hours included 30,000 hours attributable to training the new recruits, out of which half of the hours were unproductive.

The costs incurred consequent on labour turnover revealed, on analysis, the following :

	₹
Settlement cost due to leaving	43,820
Recruitment costs	26,740
Selection costs	12,750
Training costs	30,490

Assuming that the potential production lost as a consequence of labour turn-over could have been sold at prevailing prices, find the profit foregone last year on account of labour turnover. Also find out profit foregone if S.P was 5% lesser than the existing S.P.

Question 10

The existing incentive system of Alpha Limited is as under:

Normal working week	5 days of 8 hours each 3 late shifts of 3 Hours each
Rate of Payment	Day work; ₹ 160 per hour Late shift ₹ 225 per hour
Average output per operator for-49hours week i.e. including 3 late shifts	120 articles

In order to increase output and eliminate overtime, it was decided to switch on to a system of payment by results. The following information is obtained:

Time-rate (as usual)	: ₹ 160 per hour
Basic time allowed for 15 articles	: 5 hours
Piece-work rate	: Add 20% to basic piece-rate
Premium Bonus	: Add 50% to time.

Required:

(i) Prepare a Statement showing hours worked, weekly earnings, number of articles produced and labour cost per article for one operator under the following systems:
   (a) Existing time-rate
   (b) Straight piece-work
   (c) Rowan system
   (d) Halsey premium system

Assume that 135 articles are produced in a 40-hour week under straight piece work, Rowan Premium system, and Halsey premium system above and worker earns half the time saved under Halsey premium system.

Question 11

In a factory bonus system, bonuses are credited to the emlpoyee in the proportion of time taken which time saved bears to time allowed. Jobs are carried forward from one week to another. No overtime is worked and a payment is made in full for all units worked on, including those subsequently rejected. From the following information, calculate for each employee - (a) the bonus hours and amount of bonus earned, (b) the total wages costs, and (c) the wages cost of each good unit produced.

Particulars	Ravi	Raja	Rama
Basic Wage Rate per hour	₹ 25	₹ 40	₹ 30
Units produced for production	2,500	2,200	3,600
Time allowed per 100 units	2hrs 36 mins	3 hrs	1hr 30 mins
Time taken	52 hrs	75 hrs	48 hrs
Rejects in units	100	40	400

CONTRACT COSTING

Question 1

The contract price was based on the following estimates of material costs:

Material A - 3,00,000 Kgs @ Rs. 60 per Kg
Material B - 5,00,000 Kgs @ Rs. 28 per Kg
Material C - 20,000 Kgs @ Rs. 650 per Kg

The Contractee agrees to bear entire price rise as well as allow 10% margin for additional usage of materials with respect to all the materials.

The actual material cost incurred was as under:

Material A - 3,45,000 Kgs @ Rs. 63 per Kg
Material B - 5,80,000 Kgs @ Rs. 32.5 per Kg
Material C - 28,000 Kgs @ Rs. 645 per Kg

You are required to calculate:

1. Increase in material cost
2. Claim under the escalation clause

Question 2

Deluxe Ltd. undertook a contract for ₹ 5,00,000 on 1st July 2017. On 30th June 2018, when the account were closed, the following details about the contract were gathered:

	₹
Materials purchased	1,00,000
Wages paid	45,000
General Expenses	10,000
Plant purchased	50,000
Materials on hand as on 30-6-2018	25,000
Wages Accrued as on 30-6-2018	5,000
Work certified	2,00,000
Cash received	1,50,000
Work uncertified	15,000
Depreciation of plant	5,000

The above contract contained an escalation clause which read as follows :

"In the event of prices of materials and rates of wages increasing 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% and 20% respectively. The value of work certified does not take into account the effect of the above clause. Prepare the contract account.

INTEGRAL NON - INTEGRAL

JOURNAL ENTRIES

(A) Material :

1. Material Purchased [Cash / Credit / Direct / Indirect]
   Stores ledgers control A/c. Dr.
   To GLA A/c.

2. Material returned.
   GLA A/c. Dr.
   To Stores ledger control A/c.

3. Direct material charged to production :
   W.I.P. Ledger control A/c. Dr.
   To Stores ledger control A/c.

4. Material returned from shop floor:
   Stores ledger control A/c. Dr.
   To W.I.P. ledger control A/c.

5. Indirect material Charged :
   OHs ledger control A/c. Dr.
   To stores ledger control A/c.

6. Carriage on material purchased :
   Stores ledger A/c Dr.
   To GLA A/c.

7. Carriage on incoming material:
   W.I.P. Ledger control A/c. Dr.
   To GLA A/c.

8. Material lost/ destroyed :
   OHs ledger control A/c Dr. - normal loss
   Costing P & L A/c. Dr. - Abnormal loss
   To stores ledger control A/c.

(B) Wages :

1. Wages incurred (direct/ indirect) :
   Wages control A/c. Dr.
   To GLA A/c .

2. Direct wages charged to production :
   W.I.P. ledger control A/c. Dr.
   To wages control A/c.

3. Indirect wages charged :
   OHs ledger control A/c. Dr.
   To wages control A/c.

(C) Direct Expenses :

1. Direct Expenses incurred :

W.I.P. Ledger control A/c. Dr.

To GLA A/c

(D) Overheads :

1. OHs incurred :

OHs ledger control A/c. Dr.

To GLA A/c

2. Absorption :

(a) Production / factory OHs.

W.I.P. Ledger control A/c. Dr.

To production OHs ledger control A/c.

(b) Selling & distribution OHs.

Cost of sales A/c. Dr.

To selling & distribution OHs ledger control A/c.

(E) Finished Goods and Produced :

1. FG Produced :

Finished goods ledger control A/c. Dr.

To W.I. P. Ledger control A/c.

Question 1

Following are the balances in the books of X Ltd. extracted from the cost ledger maintained under non-integral system. Balances as on 01.04.2018:

Stores ledger Control Account	Rs. 80,000
Work-in-progress ledger Control Account	Rs.90,000
Finished Goods ledger Control Account	Rs.1,50,000
Factory overhead Account (debit)	Rs.24,000
Administration overhead Account (debit)	Rs.12,000
Selling and Distribution overhead Account (debit)	Rs.15,000

Following are the transactions for the year ended 31.03.19

	Rs.
Material purchased	3,00,000
Materials issued for production	3,10,000
Materials returned to supplier	10,000
Direct wages paid	2,68,000
Indirect wages paid	92,000
Selling and Distribution overhead incurred	2,00,000
Production overhead incurred	4,32,000
Administration overhead incurred	4,00,000
Sales	21,00,000

Following other information is available:

1. Production overheads are absorbed at 200% of direct wages.
2. Administration overheads are absorbed at 50% of conversion cost and to be charged to WIP during the year.
3. Selling and Distribution overhead are absorbed at 10% of Sales.
4. Closing Stock of Finished Goods Rs. 1,90,000
5. Closing Stock of Work in Process Rs. 66,000

You are required to show the necessary accounts under the non-integrated system for the year ended 31.03.2019 and a trial balance as on the same date.

Question 2

X Ltd. manufactures a product and also carries out production as per special orders. As on 01.04.18, it has following balances: Prepare necessary accounts.

Opening stock of Raw Materials	₹ 30,000
Stock of Work-in-process	₹ 40,000
Job No. 21 (in process)	₹ 20,000
Finished Goods Stock	₹ 50,000
During the year ended 31.03.19 , following transactions took place:	
Direct Material purchased	₹ 1,00,000
Direct Material issued to Factory	₹ 90,000
(Including Rs. 16,000 for job No. 21 and Rs. 5,000 for Job No. 22, newly started)	
Direct Wages Paid	₹ 1,03,000
(Including Rs. 24,000 for job No. 21 and Rs. 16,000 for Job No. 22, newly started)	
Production Overhead incurred	₹ 2,00,000
Production Overhead absorbed at 200% of direct wages.	
Ignore administration and selling overheads and assume Job No. 21 got completed and sold, whereas Job No. 22 is in process.	
Total sales for the period Rs. 6,00,000 (including Job No. 21)	
Closing stock of work-in-process	₹ 12,000
Closing stock of finished goods	₹ 20,000

Question 3

A Ltd. was to commence production from 01.04.2018 and had no inventories at the beginning of the year. Following were extracted from cost records during year ended 31.03.2019.

Material purchased Rs. 12,00,000
Wages paid Rs. 7,20,000
(Included Rs. 1, 20, 000 paid to indirect labour)

Production overheads were to be recovered at 125% of direct wages. Actual production overheads incurred excluding indirect labour amounted to Rs. 6,36,000.
Closing balance of W.I.P amounted to Rs. 1,20,000 (assumed 50% complete in all respect).
Total numbers of units lying incomplete were 2,000 and numbers of units completed during the year were 19,000. Number of units sold during the year 15,000 at a uniform selling price of Rs. 160 per unit.
Closing stock of raw materials was Rs. 1,50,000.
Any amount of under or over absorbed overheads are to be recovered by using supplementary rate on the basis of actual production.
Prepare necessary accounts for the year ended 31.05.2019. Ignore administration and selling overheads.

Question 4

Trial balance as on 01.04.2018:-

	Dr.	Cr.
Share capital		20,00,000
Reserves		14,60,000
Buildings	10,00,000	
Machinery	12,00,000	
Cash & Bank	1,60,000	
Debtors & Creditors	5,00,000	3,00,000
Raw material inventory	2,00,000	
W.I.P. inventory	3,00,000	
Finished goods inventory	4,00,000	

During year ended 31.03.2019

Purchases	Rs. 13,00,000
Issue of direct materials	Rs. 11,60,000
Issue of indirect materials	RS. 1,50,000
Direct wages	Rs. 6,80,000
Indirect wages	Rs. 1,67,000
Production overhead incurred	Rs. 6,45,000
Administration overhead incurred	Rs. 3,20,000
Selling &distribution overhead incurred	Rs. 4,00,000
Selling & distribution overhead absorbed	Rs. 3,98,000
Cash sales	Rs. 8,00,000
Credit sales	Rs. 38,00,000
Collection for debtors	Rs. 40,40,000
Payment to creditors	Rs. 10,20,000

Production overheads absorbed @ 200% of direct wages.
Donation paid Rs. 10,000.
Administration overheads absorbed Rs. 3,40,000.
Depreciate building at 5%, Plant & machinery at 20%.
Closing stock of W.I.P. Rs. 2,00,000
Closing stock of finished goods RS. 1,60,000.
Building depreciation is to be apportioned in the ratio of 5:3:2 for factory, administration office and sales office respectively. Prepare necessary accounts and Trial balance as on 31.03.2019.

BUDGET & BUDGETARY CONTROL

Question 1

Following are the details extracted from the records of X Ltd.

Particulars	Capacity Utilisation	
	50%	60%
Number of units	2,00,000	2,40,000
Selling Price per unit	50	50
Variable cost per unit	20	20
Factory overheads	20,00,000	20,00,000
Administration overheads	8,00,000	8,00,000
Selling and Distribution overheads	16,00,000	18,40,000

You are required to prepare a flexible budget at the following capacity level:
50%, 60%, 70%, 80% and 100%
Other information is as below:

1. Production beyond 3,00,000 units would result into fixed factory cost increased by 30%.
2. Capacity utilization beyond 70% would result decline in selling price by 10% and at 100% capacity utilization the selling price shall decline by 16%.
3. At 100% capacity utilization extra advertisement cost would increase the selling overhead by Rs. 6,00,000 compared to the normal level and similar at 70% and 80% by Rs. 2,00,000 and Rs. 4,00,000 respectively.

Suggest the optimum capacity utilization level.

Question 2

The following are the details of the Budgeted and the actual cost in a factory for six months from January to June, 2018.From the figures given below you are required to prepare the production cost budget for the period from January to June, 2019.

	Budget	**Actual**
Production (units)	20,000	18,000
	Rs.	Rs.
Material cost	40,00,000	39,90,000
	(2,000 MT @ Rs. 2,000)	(*1,900 MT @ Rs. 2,100)
Labour cost	8,00,000	7,99,920
	(@ Rs.20 per hour)	(@ Rs.22 per hour)
Variable overheads	2,40,000	2,16,000
Fixed overheads	4,00,000	4,20,000

In the first half of 2019, production is budgeted for 25,000 units. Material cost per tonne will increase from last year's actual by Rs.100 but is proposed to maintain the consumption efficiency of 2018 as budgeted.
Labour efficiency will be lower by another 1% & labour rates will be Rs. 22 per hour.
Variable and Fixed overheads will go up by 20% over 2018 actual.
You are required to prepare the production cost budget for the period January-June, 2019 giving all the workings.

Question 3

CTB Ltd. produces and markets three products – C, T and B. The company is presenting its budget for the next quarter ending 31st March, 2019. It expects to sell 4,200, 800 and 500 nos. at selling price of Rs.50, Rs.85, and Rs.158 per unit respectively of the products C, T and B during the above period. The following data is furnished.

(i) Material and Labour requirements :

	C	T	B
Timber per unit (in cu. Ft.)	0.5	1.2	2.5
Upholstery per unit (in sq. yds)	0.25	-	-
Carpenter's time (mins. Per unit)	45	60	75
Fixer & Finisher's time (mins. Per unit)	15	15	30

Timber costs Rs.50 per cu. Ft. and upholstery cost Rs.20 per sq. yds. Fixing and Finishing Material costs 5% of the cost of timber and upholstery. Carpenter get Rs.6 per hour and Fixer and Finisher gets Rs.4.80 per hour.

(ii) Inventory Levels planned :-

	Timber (cu.ft)	Upholostery (sq. yds)	C (nos.)	T (nos.)	B (nos.)
Opening	600	400	400	100	50
Closing	650	260	200	300	50

(iii) Fixed overheads would be Rs.8,000 per month.

You are required to prepare :-

(a) A production budget showing quantities of C, T, B to be manufactured.
(b) A raw materials purchase budget in quantities as well as in rupees.
(c) A direct wages cost budget.
(d) A statement showing variable cost of manufacturing per unit of all three products viz. C, T & B.
(e) Budget net income / profit for the quarter ending 31st March 2019.

Question 4

You are required, from the data give below, to prepare next year's budget for :
(a) Production **(b)** Purchases
Standard cost data are as follows :

		Product Aye	Product Bee
		₹	₹
Direct Materials			
X	24 kilos at ₹ 2	48	
	30 kilos at ₹ 2		60
Y	10 kilos at ₹ 5	50	
	8 kilos at ₹ 5		40
Z	5 kilos at ₹ 6	30	
	10 kilos at ₹ 6		60
Direct wages			
Unskilled	10 hours at ₹ 3 per hr.	30	
	5 hours at ₹ 3 per hr.		15
Skilled	6 hours at ₹ 5 per hr.	30	
	5 hours at ₹ 5 per hr.		25

Production overheads is absorbed on the basis of direct labour hours, while other overhead is recovered on the basis of 20% of production cost. Profit is calculated at 20% of sales price.

	Materials		
	X	Y	Z
	₹	₹	₹
Stock at standard price			
1st January	60,000	1,25,000	72,000
31st December	70,000	1,35,000	75,000

Production overheads	₹ 9,00,000
Labour hours	75,000

	Product Aye (₹)	Product Bee (₹)
Finished goods at production cost		
Opening stock	1,52,000	2,56,000
Closing stock	1,90,000	3,52,000
Sales at standard sale price	13,68,000	15,36,000

Question 5

ACE Ltd. manufactures three products A, C and E in two production departments F & G, in each of which are employed two grades of labour. The cost accountant is preparing the annual budgets for the next year and he has asked you to prepare, using the data given below ; the labour cost budget.

	Product – A (₹ 000)	Product – C (₹ 000)	Product – E (₹ 000)
Finished stocks :			
Budgeted stocks			
1st January next year	720	540	1,800
31st December next year	600	570	1,000
All stocks are valued at standard cost per unit	24	15	20
Standard profit calculated as percentage of selling price	20%	25%	16.2/3%

	Total (₹ 000)	Product-A (₹ 000)	Product-C (₹ 000)	Product - E (₹ 000)
Budgeted sales are :				
South	6,600	1,200	1,800	3,600
West	5,100	1,500	1,200	2,400
North	6,380	1,500	800	4,080
	18,080	**4,200**	**3,800**	**10,080**
Normal rejection of production	---	10%	20%	5%

Standard labour times per unit and standard rates per hour :

	Rate	Hours Per Unit		
		Product – A	Product – C	Product – E
Department – F				
Grade – 1	1.80	2.0	3.0	1.0
Grade – 2	1.60	1.5	2.0	1.5
Department – G				
Grade – 1	2.00	3.0	1.0	1.0
Grade – 2	1.80	2.0	1.5	2.5

Question 6

The following data relate to product Aye :

Budgeted data.

	1st January to 31st March 2016		
Sales Division	1	2	3
Sales of Aye ₹	60,000	3,60,000	2,40,000
Stock of Aye			
Opening Units	100	350	250
Maximum units	150	500	350

Sales and production occur evenly each month during each budget quarter. Stocks of finished goods be increased to maximum level by 1st April 2016.

Standard Cost Data :

Direct Materials DM 1 10 Kilos at ₹ 3 per kilo
DM 2 5 Kilos at ₹ 2 per kilo
Direct Wages DW 1 5 Hours at ₹ 4 per hour
DW 2 2 Hours at ₹ 5 per hour

Production Overheads is absorbed as a labour hour rate, i.e. ₹ 12/- in respect of DW1 and ₹ 10/- in respect of ₹ DW 2. Administration and selling overheads is recovered at 20% of production cost. Profit is calculated at 10% of selling price.

	Direct Materials data	
	DM 1	**DM 2**
Maximum consumption per week (Kilos)	3,600	1,800
Minimum consumption per week (Kilos)	2,400	1,200
Economic - order quantity (Kilos)	20,000	12,000
Stock at 31st December, 2015 (Kilos)	13,000	9,900

Lead time from suppliers (weeks)

Maximum	6	5
Minimum	4	3

Sales director has requested that stocks of finished goods be increased to maximum level by 1st April, 2016. You are required to prepare the following budgets for the three months ending 31st March, 2016.

(a) Production **(b)** Purchases

OPERATING COSTING

TRANSPORT INDUSTRY

Question 1

A mineral is transported from two mines A and B and unloaded at plots in a railway station. Mine A is at distance of 10 kms and B is at distance of 15 kms from railhead plots. A fleet of lorries of 5 tonne carrying capacity used for transport of mineral from mines. Records reveal that the lorries average a speed of 30kms per hour, when running and regularly tare 10mins to unload at the railhead. At mine A loading time averages 30mins per load while at B 20mins.

Driver's wages, depreciation, insurance and taxes are found to cost Rs 9 per hour operated. Fuel, oil, tyres, repairs and maintenance cost Rs 1.20 per km.

Draw up a statement, showing the cost per tonne –km of carrying mineral from each mine.

Question 2

Remix makes ready-mixed cement and operates a small fleet of vehicles, which delivers the product to customers within its delivery area and return empty.
Maintenance records for the previous four years reveal:

Year	Mileage of vehicles	Maintenance cost
1	1,80,000	Rs. 14,000
2	1,65,000	Rs. 13,250
3	1,60,000	Rs. 13,000
4	1,75,000	Rs. 13,750

Transport statistics reveal:

Vehicle	No. of Journeys Each day	One way tonnages carried to customers (tonnes)	Average distance to customers (miles)
1	6	4	10
2	4	4	20
3	2	5	40
4	2	6	30
5	1	6	60

There are five vehicles operating a five-day week, for 50 weeks a year.
Inflation can be ignored.
Standard cost data includes:
Driver's wages are Rs. 150 each per week.
Supervisors / relief driver's wages are Rs. 200 per week.
Depreciation, on a straight-line basis with no residue value.

	Cost	Life
Loading Equipment	Rs. 1,00,000	5 years
Vehicles	Rs. 30,000 each	5 years

Petrol / Oil costs 20 paise per mile.
Repair 7½ paise per mile.
Vehicle licenses cost Rs. 400 p.a. for each vehicle.
Insurance cost Rs. 600 p.a. for each vehicle.
Tyres cost Rs. 3,000 p.a. in total
Miscellaneous costs Rs. 2,250 p.a. in total.
You are required to calculate a standard rate per tonne / mile of operating the vehicles.

Question 3

A city municipality arranges for the removal of its garbage by means of a motor vehicle transport. The following vehicles are maintained:

No. of Vehicles	Specification
30	3 tonne lorries
40	5 tonne lorries
50	2 tonne lorries
60	4 tonne lorries

On an average, each lorry makes 5 trips per day and each trip covers on average distance of 6 km one way. Each lorry carries garbage weighing only 50% of capacity. Taking an annual average, 10% of the lorries are laid up for repairs every day. Total cost for the month is Rs. 1,45,800. Assuming that a month consists of 30 days, calculate the cost per tonne-km. for removal of garbage.

Question 4

The data given relates to "Vasanth Talkies" mini theatre, for the year ending 31st March, 2006:

Salaries :		Rs.		Rs.
1	Manager	800 p.m.	Carbon	7,235
10	Gate-keepers	200 p.m. each	Mics. Expenditure	5,425
2	Operators	400 p.m. each	Advertisement	34,710
4	Clerks	250 p.m. each	Admn. Expenses	18,000
Electricity & Oil		11,655	Hire of print	1,40,700

The premises are valued at Rs.6,00,000 and the estimated life is 15 years. Projector and other equipment's cost Rs.3,20,000 on which 10% depreciation is to be charged.

Daily three shows are run throughout the year. The total capacity is 625 seats which is divided into three classes as follows :

Janata circle	250 seats
Sanman circle	250 seats
Lord's circle	125 seats

Ascertain cost per man-show assuming that :

(a) 20% of the seats remain vacant, and

(b) Weightage to be given to the three classes in the ratio of 1 : 2 : 3.

Determine the rates for each class if the management expects 30% return on gross proceeds. Ignore entertainment taxes.

HOTEL INDUSTRY

Question 5

Maharaja Hotel has three types of suits for its customer viz. single room, double room and three rooms respectively. State the rent to be charged for each type of suite on the basis of the following data:-

1. The number of suits of each type are:-
   - a) Three room suites 20
   - b) Double room suites 30
   - c) Single room suites 100

2. The occupancy of each type of suite is as follows:

		Summer	Winter
a)	3 room suites	60%	20%
b)	2 room suites	80%	20%
c)	1 room suites	90%	50%

3. The annual expenses are as follows:-
   a) Staff salaries Rs 2,20,500
   b) Room attendant's wages per day, when occupied:

	Summer Rs.	Winter Rs.
3 room suites	4	6
2 room suites	3	4.50
1 room suites	2	3

   c) Lighting and power for full month when occupied both for summer and winter: -

	Lighting	Power
3 room suites	80	40
2 room suites	60	30
1 room suites	40	20

	Rs.
d) Repairs and renovation	42,000
Linen etc	45,000
Interior decoration	50,000
Sundries	31,550

   e) Depreciation:
   Building @5% on Rs 14,00,000
   Furniture & fixture@ 10% on Rs 1,00,000
   Air conditioner @ 10% on Rs 2,00,000

Summer may be assumed for 7 months and winter to be 5 month in year. A month may be taken as 30 days. Profit desired is @ 25% on costs. The rent of the double room suites is to be fixed 1½ times the single room suites and that of 3 rooms suites as twice the single room suite.

GENERATION INDUSTRY

Question 6

From the following particulars calculate cost per therm and cost per unit of electricity generated for the month of March, 2019

(1) Coal 1,400 Quintals @ Rs.15/- per Quintal.
(2) Water 1,50,000 litres @ Rs.1.00 per 1,000 litres.
(3) Freight and handling of coal is 10% of the cost of coal.
(4) Charge for Ash disposal Rs.200/-
(5) Repairs, maintenance and discaling Rs.2,000/- per month
(6) Stores Rs.1,500/- per month.
(7) Supervision and administrative cost Rs.2,500/- per month.
(8) Wages and Salaries of steam production unit 50 men @ Rs.150/- per month.
(9) Wages and Salaries of generating unit 10 men @ Rs.300/- per month.

	Cost	Residual Values	Life
(10) Steam production plant	62,000	2,000	10 years
Generating Plant	1,00,000	4,000	10 years

Rate of supervision and administrative cost and stores between steam production and generating plant.

	Steam Production	Generating Plant
Supervision Cost	3	2
Stores	2	1
Repairs and maintenance	½	½

Steam production 40,000 therms 4/5 of the steam production is used for generation and the total electricity generated is 3,00,000 units.

AVIATION INDUSTRY

Question 7

ABC Airways owns a single jet aircraft and operates between Bangalore and New Delhi. Flights leave Bangalore on Mondays and Thursdays and depart from New Delhi on Wednesdays and Saturdays. ABC Airways cannot afford any more flights between Bangalore and New Delhi. Only tourist class seats are available on its flights.

An analyst has collected the following information:

Seating capacity per plane	360
Average Passengers per flight	100
Flights per week	4
Flights per year	208
Average one-way fare	Rs. 10,000
Variable fuel costs	Rs. 1,40,000 per flight
Food service to passengers (not charged to passengers)	Rs. 400 per passenger
Commission paid to travel agents paid by ABC Airways on each ticket booked on ABC Airways (Assume that all ABC tickets are booked by travel agents)	8% of fare
Fixed annual lease costs allocated to each flight	Rs. 5,30,000 per flight
Fixed ground services (maintenance, check-in baggage handling) costs allocated to each flight	Rs. 70,000 per flight
Fixed salaries of flights crew allocated to each flight	Rs. 40,000 per flight

Required:

1. What is the operating income that ABC Airways makes on each one-way flight between Bangalore and New Delhi?
2. The market research department of ABC Airways indicates that lowering the average one-way fare to Rs. 9,600 will increase the average number of passengers per flight to 106. Should ABC Airways lower its fare?
3. Travel India, a tour operator, approaches ABC Airways to charter its jet aircraft twice each month, first to take Travel India International tourists from Bangalore to New Delhi and then bring the tourists back from New Delhi to Bangalore. If ABC Airways accepts the offer, it will be able to offer only 184 (208 minus 24) of its own flights each year. The terms of the charter are:
   a. For each one-way flight Travel India will pay ABC Rs. 7,50,000 to charter the plane and to use its flight crew and ground service staff.
   b. Travel India will pay for fuel costs.
   c. Travel India will pay for all food costs.

   On purely financial considerations, should ABC Airways accept the offer from Travel India Tours and Travel?

MISCELLANEOUS

Question 1

Income Statement - Semi Variable Costs and Pricing Decisions

Maximum production capacity of JK Ltd is 5,20,000 units per annum. Details of estimated cost of production are

- Direct Material ₹ 15 per unit
- Direct Wages ₹ 9 per unit (subject to a minimum of ₹ 2,50,000 per month.
- Fixed Overheads ₹ 9,60,000 per annum.
- Variable Overheads ₹ 8 per unit.
- Semi- Variable Overheads are ₹ 5,60,000 per annum up to 50% capacity and additional ₹ 1,50,000 per annum for every 25% increase in capacity or a part of it.

JK limited worked at 60% capacity for the first 3 months during the year, but it is expected to work at 90% capacity for the remaining nine months.

The Selling Price per unit was ₹ 44 during the first 3 months.

Calculate what Selling Price per unit should be fixed for the remaining nine months to yield a Total Profit of ₹ 15,62,500 for the whole year.

Question 2

In a factory following the Job costing Method, an abstract from WIP on 30th September was prepared as under-

Job No.	Materials	Direct Labour Hours	Labour Cost	Factory Overheads applied
115	₹ 1,325	400 hours	₹ 800	₹ 640
118	₹ 810	250 hours	₹ 500	₹ 400
120	₹ 765	300 hours	₹ 475	₹ 380

Materials used in October were as follows:

Materials Requisition No.	54	55	56	57	58	59
Job No.	118	118	118	120	121	124
Cost	₹ 300	₹ 425	₹ 515	₹ 665	₹ 910	₹ 720

A summary of labour hours deployed during October is as under-

Job No.	No. of hours Shop A	No. of hours Shop B.
115	25	25
118	90	30
120	75	10
121	65	-
124	20	10
Total	275	75
Indirect Labour		
Waiting for Material	20	10
Machine Breakdown	10	5
Idle Time	5	6
Overtime Premium	6	5
Total	316	101

A Shop Credit Slip was issued in October that material issued under Requisition No. 54 was returned back to stores as being not suitable. A Material Transfer Note issued in October indicated that material issued under Requisition No. 55 for Job 118 was directed to Job 124.

Question 3

The hourly rate in Shop A per labour hour is 3 per hour and at Shop B ₹ 2 per hour. The Factory Overhead is applied at the same rate as in September. Jobs 115,118 and 120 were completed in October.

Compute the Factory cost of the completed jobs. It is the Company practice to put 10% on the Factory Cost to cover AOH and SOH and invoice the job to the customer on a total cost plus 20% basis. What would be the Invoice Price of these three jobs?

Question 4

What to do Ltd. has just received an enquiry from M/s Aditya Brothers for the supply of a sub-part Googly. Annual supply would be 3,60,000 pieces for the next 15 years. The company ascertains the following information for decision making.

- Cost of Material for each component: ₹ 6
- Direct Labour: 6 minutes per unit. Labourers are paid at ₹ 50 per hour.

However, for machinery set-up time, labourers are paid only ₹ 40 per hour, which is absorbed as Factory OH.

Machine set-up time: 2 and half hours, Simple Machine Hour Rate: ₹ 100 per hour.

Average Cost of Stock holding = ₹ 700 per annum for every 100 units.

The company has approached you for the following consultations.

1. What should be the economic batch size? Why should this size be used for production?
2. What is the Selling Price, if OH is accounted for at ₹ 4 per unit and one third margin on cost is desired?
3. What would be the forecast annual profit after estimated share of Head Office Expenses is ₹ 12 lakhs?