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TEST PAPER - 01

(Chapters Covered – Basic Costing, Cost Sheet, Material Cost and Employee Cost)

COST ACCOUNTING

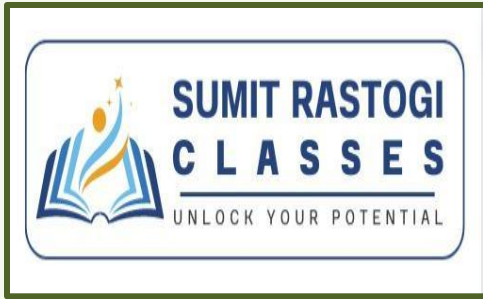
Time Allowed: 3 Hours

Full Marks: 100

**Section A contains Question Number 1. All parts of this question are compulsory.
Working notes should form part of the relevant answer.**

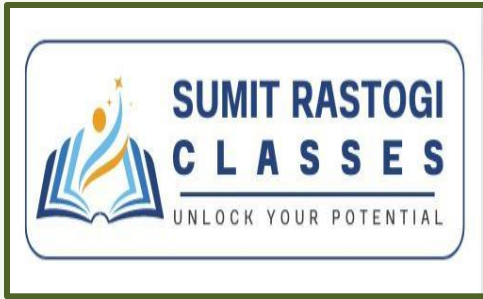
SECTION-A

1. **Choose the correct answer from the given alternatives (you may write only the Roman number and the alphabet chosen for your answer) (2×15 = 30 Marks)**
 - (i) **Which of the following is not an element of works overhead?**
 - (a) Factory repairman's wages
 - (b) Sales manager's salary
 - (c) Plant manager's salary
 - (d) Product inspector's salary
 - (ii) **The sum of direct labour and factory overhead is termed as:**
 - (a) Variable cost
 - (b) Conversion cost
 - (c) Sunk cost
 - (d) Fixed cost
 - (iii) **There were 5000 workers in a factory on 1st April, 2016. New entrants in service during the year 2016-17 were 250 and separations were 130. Calculate Labour Turnover Rate using Flux Method.**
 - (a) 2.75%
 - (b) 3.75%
 - (c) 5.75%
 - (d) 6.75%
 - (iv) **For the purpose of cost sheet preparation, costs are classified based on:**
 - (a) Variability
 - (b) Functions
 - (c) Nature
 - (d) Relevance



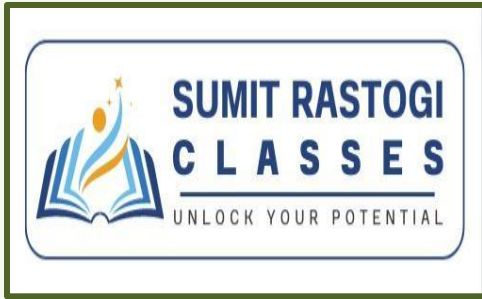
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- (v) A work measurement study was carried out in a firm for 10 hours. The information generated was: Units produced 350; Idle time 15%; Performance rating 120%; and Relaxation Allowance 10% of standard time. What is the standard time for each unit produced?
- (a) 1.333 minutes
 - (b) 2.223 minutes
 - (c) 1.943 minutes
 - (d) 2.333 minutes
- (vi) Cost which relates to an item where the input has an explicit physical relationship with the output is known as:
- (a) Opportunity cost
 - (b) Imputed cost
 - (c) Engineered cost
 - (d) Managed cost
- (vii) The allotment of whole items of cost of centers or cost unit is called:
- (a) Cost allocation
 - (b) Cost apportionment
 - (c) Overhead absorption
 - (d) None of these
- (viii) Prime Cost = ₹12,50,000; Works Cost = ₹20,00,000 and office overheads are 30% of factory overheads. What is the Cost of Production?
- (a) ₹20,75,000
 - (b) ₹22,25,000
 - (c) ₹22,75,000
 - (d) None of the above.
- (ix) At the economic ordering quantity level, the following is true:
- (a) The carrying cost is minimum
 - (b) The ordering cost is minimum
 - (c) The purchase price is minimum
 - (d) The ordering cost is equal to the carrying cost
- (x) Time and motion study is conducted by the:
- (a) Payroll department
 - (b) Time-keeping department
 - (c) Engineering department
 - (d) Personnel department



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- (xi) Material with invoice value ₹10,000 was received in the Stores Dept. The transport cost was ₹200. Since the material leaked in transit, damage to other goods of ₹350 had to be paid to the transporter. What would be the material cost?
- (a) ₹10,200
 - (b) ₹10,800
 - (c) ₹10,600
 - (d) ₹10,400
- (xii) Cost units of Automobile Industry is:
- (a) Number of calls
 - (b) Cubic meter
 - (c) Bed Night
 - (d) Number of vehicles
- (xiii) A Company buys in lots of 6,250 units, which is a 3 month's supply. The cost/unit is ₹2.40. Each order costs ₹45 and the inventory carrying cost is 15% of the average inventory value. Calculate the EOQ.
- (a) 2,000 units
 - (b) 2,500 units
 - (c) 3,000 units
 - (d) None of the above.
- (xiv) 10,000 units of material 'X' are consumed per year having per unit cost of 20. Cost of processing an order is ₹50 while annual interest rate is 5%. If annual carrying cost per unit of material 'X' is 15% (other than interest), calculate the EOQ and number of orders per year.
- (a) 250 units 40 orders
 - (b) 400 units 25 orders
 - (c) 500 units 20 orders
 - (d) None of the above
- (xv) When a direct worker is paid on a monthly fixed salary basis, the following is true:
- (a) There is no idle time lost
 - (b) Idle time cost is separated and treated as overhead
 - (c) There is no idle time cost
 - (d) The salary is fully treated as factory overhead cost



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SECTION-B

Answer any five questions from question number 2 to 8. 14x5=70

2 (a) A company requires 1,00,000 units of an item annually. The cost per unit is ₹10. Ordering cost is 500 per order and inventory carrying cost is 50% per unit per annum.

(i) Find the Economic Order Quantity (EOQ).

(ii) The supplier offers a discount of 3% for order quantity 4500-5999 and 3.5% for order quantity 6000 and above.

Work out a statement comparing the total inventory management costs for the EOQ, 4500 and 6000 units of order and comment on your findings. Advise the company on how much to order. (7 marks)

2 (b) Mohan and Sohan are two workers who produce the same product using the same material. Their normal wage rate is also same. Mohan is paid bonus according to the Rowan Plan, while Sohan is paid bonus according to Halsey Premium Plan. The time allowed to make the product is 1,000 hours. Mohan takes 600 hours while Sohan takes 800 hours to complete the product. The factory overhead rate is 10 per man-hour actually worked. The factory cost for the product for Mohan is ₹72,800 and for Sohan it is ₹76,000.

You are required:

(i) to find the normal rate of wages;

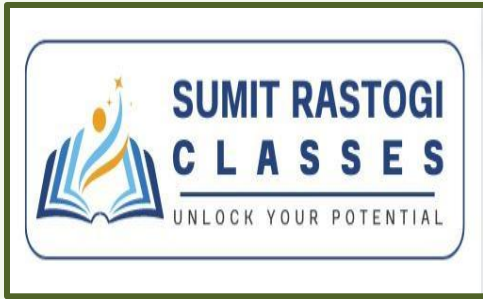
(ii) to find the cost of materials; and

(iii) to prepare a statement comparing the factory cost of the products as made by both the workers. (7 marks)

3 (a) From the following particulars with respect to a particular item of materials of a manufacturing company, Calculate the Best Quantity to order:

Ordering Quantities (ton)	Price per ton (Rs.)
Less than 250	6.00
250 but less than 800	5.90
800 but less than 2,000	5.80
2,000 but less than 4,000	5.70
4,000 and above	5.60

The annual demand for the material is 4,000 tons. Stock holding costs are 25% of material cost p.a. The delivery cost per order is Rs. 6. (7 marks)



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3 (b) M/s Sun (India) Ltd. is an export-oriented unit manufacturing communication equipment of a standard size. It has to send a tender price quotation (in rupee terms) to its foreign buyer in the UK. Company submits the following figures relating to year 2023:

Output: 50,000 units

Expenses Incurred	₹	Expenses Incurred	₹
Local Raw Material Consumed	20,00,000	Excise Duty	4,00,000
Imports of Raw Material (Actual Consumption)	2,00,000	Administrative Office Expenses	4,00,000
Direct Labour in works	17,00,000	Salary of the Managing Director	2,00,000
Direct Expenses	3,00,000	Fees of Directors	40,000
Indirect Labour in works	4,00,000	Expenses on Advertising	3,20,000
Stores and Spare Parts	1,40,000	Selling Expenses	5,00,000
Fuel	3,00,000	Packing and Distribution Expenses	3,40,000
Depreciation on Plant	2,00,000		
Salaries of Works Personnel	2,00,000		

Other information:

- (i) Local raw material now costs 10% more.
- (ii) A profit margin of 20% on sales is maintained.
- (iii) The Government grants subsidy of ₹40 per unit of export.

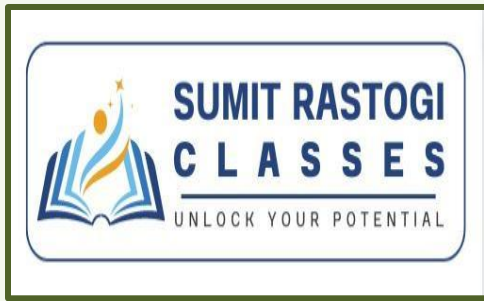
Required: Prepare a statement showing tender price per unit to be submitted to the UK buyer. **(7 marks)**

4 (a) ZINTES LTD. a manufacturing company has its factories at two locations. Rowan plan is in use at location A and Halsey plan at location B. Standard time and basic rate of wages are same for a job which is similar and is carried out on similar machinery. Time allowed is 60 hours.

Job at location A is completed in 36 hours while at B, it has taken 48 hours. Conversion costs at respective places are Rs.1224 and Rs.1500. Overheads amount to Rs.20 per hour.

Required:

- (i) Find out the normal wage rate, and
- (ii) Compare conversion costs. **(6 marks)**



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4 (b) ZOXIN LTD. Manufactures two types of pens Super pen and Normal pen. The cost data for the year ended on 31st March 2022 is as follows:

Direct Materials	8,00,000
Direct Wages	4,48,000
Production Overhead	1,92,000
Total	<u>14,40,000</u>

It is further ascertained that:

1. Direct materials cost in Super Pen was twice as much as direct material in Normal Pen
2. Direct Wages for Normal Pen were 60% of those for Super Pen
3. Production overhead per unit was at the same rate for both the types
4. Administration overhead was 200% of direct labour for each
5. Selling cost was ₹ 1 per Super Pen
6. Production and sales during the year were as follow:

Production		Sales	
	No. of Units		No. of Units
Super Pen	40,000	Super Pen	36,000
Normal Pen	1,20,000		

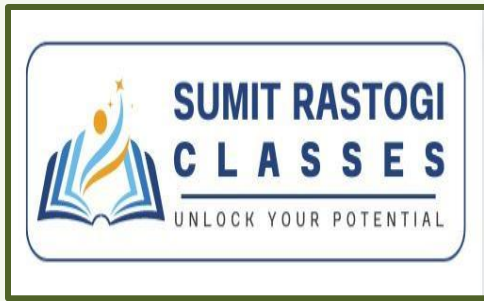
7. Selling price was ₹ 30 per unit for Super Pen.

Required: Prepare a cost sheet for 'Super Pen' showing:

- (i) Total work cost
- (ii) Cost per unit and Total Cost
- (iii) Profit per unit and Total Profit (8 marks)

5 (a) The following summarized information is available from the records of Oil Ltd. for the month of March, 2017:

Sales for the month:	₹19,25,000
Opening Stock as on 1 March, 2017:	1,25,000 litres @ ₹6.50 per litre
Purchases (including freight and insurance):	
March 5	1,50,000 litres @ ₹7.10 per litre
March 27	1,00,000 litres @ ₹7.00 per litre
Closing stock as on 31 st March, 2017:	1,30,000 litres



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Expenses for the month are ₹45,000. Pricing of material issues is being done at the end of the month after all receipts during the month.

On the basis of above information, calculate the following using FIFO and LIFO methods of pricing:

- (i) Value of closing stock as on 31st March, 2017.
- (ii) Cost of goods sold during March, 2017.
- (iii) Profit or loss for March, 2017. **(7 marks)**

5 (b) The existing Incentive system of SHRISTI LTD. is as under:

Normal working week : 5 days of 8 hours each plus 3 late shifts of 3 hours each
Rate of Payment : Day work : Rs.160 per hour
Late shift : Rs.225 per hour

Average output per operator for 49-hours 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:

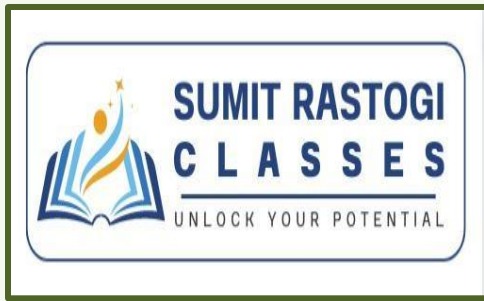
Time-rate (as usual) : Rs. 160 per hour
Basic time allowed for 15 articles : 5 hours
Piece-work rate : Add 20% to basic piece-rate
Premium Bonus : Add 50% to time

Required:

Prepare a Statement showing hours worked, weekly earnings, number of articles produced and labour cost per article for one operator under the following systems:

- (i) Existing time-rate
- (ii) Straight piece-work
- (iii) Rowan system
- (iv) Halsey premium system

Assume that 135 articles are produced in a 40-hour week under straight piece work, Rowan Premium System, the Halsey Premium System above and worker earns half the time saved under Halsey Premium System. **(7 marks)**



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6 (a) ZION LTD uses three types of materials A, B and C for production of Product-P for which the following data apply:

Raw Material	Usage per unit of Product (kgs)	Reorder quantity (kgs)	Price per Kg (Re.)	Delivery Period (in weeks)			Reorder level (kgs)	Minimum level (kgs)
				Minimum	Average	Maximum		
A	10	10000	0.10	1	2	3	8000	?
B	4	5000	0.30	3	4	5	4750	1550
C	6	10000	0.15	2	3	4	?	2000

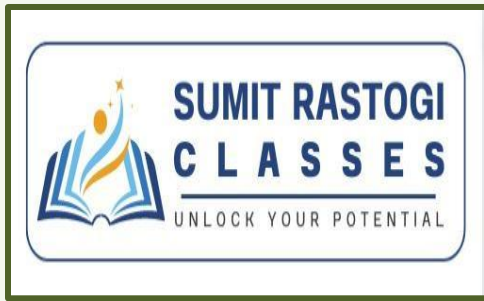
Weekly production varies from 175 to 225 units, averaging 200 units of the said product. What would be the following quantities?

- (i) Minimum stock of A,
- (ii) Maximum stock of B,
- (iii) Re-order level of C,
- (iv) Average stock level of A. (7 marks)

6 (b) Z Ltd. manufactured and sold 200 typewriters in the year 2017. Its summarized Trading and Profit & Loss Account for the year 2017 is as follows:

Output: 200 units

Particulars	Amount	Particulars	Amount
To Cost of Raw Material Consumed	1,20,000	By Sales	6,00,000
To Direct Wages	1,80,000		
To Manufacturing Charges	75,000		
To Gross Profit	2,25,000		
	6,00,000		6,00,000
To Management Expenses	90,000	By Gross Profit	2,25,000
To General Expenses	30,000		
To Rent, rates and taxes	15,000		
To Selling Expenses	45,000		
To Net Profit	45,000		
	2,25,000		2,25,000



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For the year 2018, it is estimated that

- (i) The output and sales will be 300 typewriters.
- (ii) Price of material will rise by 25% compared to previous year level.
- (iii) Wages per unit will rise by 10%.
- (iv) Manufacturing charges will increase in proportion to the combined cost of material and wages.
- (v) Selling expenses per unit will remain unchanged.
- (vi) Other expenses will remain unaffected by the rise in output.

Required: Prepare a Cost Sheet showing the cost at which typewriters will be manufactured in 2018 and give price at which it should be marketed so as to show profit of 10% on selling price. **(7 marks)**

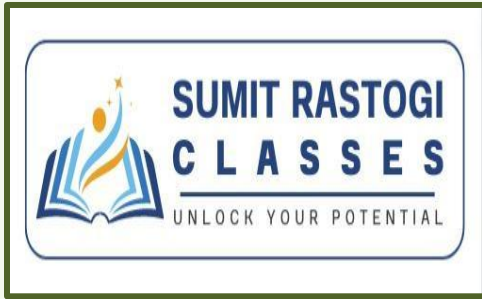
- 7 (a) M/s Peacock Ltd. is in the process of evaluation of employees' welfare scheme of the company. In this regard, it has selected three workers - K, L, and M to study their wage earnings. The company furnishes the following particulars for the month of April, 2023 as under:

	K	L	M
(i) Job completed (Units)	10,000	8,000	14,400
(ii) Out of above output rejected and unsaleable (Units)	400	160	1,600
(iii) Time allowed for 100 units	2 Hrs. 36 Min.	3 Hrs.	1 Hr. 30 Min.
(iv) Basic wage rate per hour (₹)	25	40	30
(v) Time taken (Hours)	200	216	184

The normal working hours per month are fixed at 176 hours. Bonus is paid @ 60% of the basic wage rate for gross time worked and gross output produced without deduction for rejected output. The rate of overtime for first 20 hours is paid at time plus 1/3 and for next 20 hours is paid at time plus 1/2.

From the above information, you are asked by the management to calculate the following for each worker:

- (i) Number of bonus hours and amount of bonus earned;
- (ii) Total wages earned including basic wages, overtime premium and bonus;
- (iii) Direct wages cost per 100 saleable units. **(7 marks)**



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7 (b) The following information is provided by GA Ltd. For the year ended on 31st March 2017:

Production and Sales will be 20,000 units

Particulars	Amount
Direct Material	30,00,000
Direct Wages	22,50,000
Factory Overhead	20,62,500
Office and Administration Overheads	8,50,000
Selling and Distribution Overheads	2,50,000
Sales	1,00,95,000

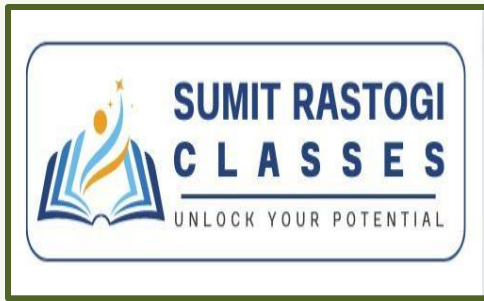
The following estimates have been made for the year 2017-18:

- (a) Production and sales will be 30,000 units.
- (b) Material prices per unit will increase by 25% but due to economy in consumption there will be a saving of 12% on the revised value.
- (c) The wage rate per unit will increase by 20%.
- (d) Factory overheads of ₹7,50,000 are fixed. The remaining factory overheads will be in the same proportion to materials consumed plus wages as in last year.
- (e) The Office and Administrative overheads will increase by 20%.
- (f) Selling and Distribution overheads per unit will be reduced by 20%.
- (g) Percentage of profit on cost desired = 5% plus rate of profit on cost in the last year.

You are required to prepare a statement showing total cost and profit both in value (to the nearest rupee) and on per unit basis for the year 2017-18.

(7 marks)

- 8 (a) List out the various measures to reduce the Labour Turnover (Any Four) **(4 marks)**
- 8 (b) State two main differences between Scrap and Spoilage. **(5 marks)**
- 8 (c) What is the role of a Cost Accountant in manufacturing organization? **(5 marks)**



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ANSWERS OF TEST PAPER - 01

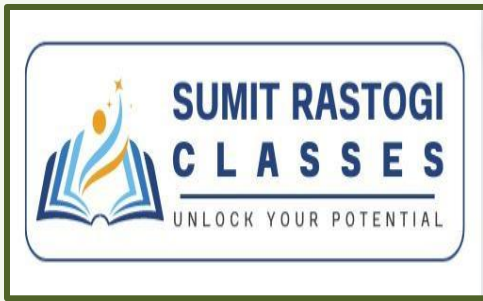
(Chapters Covered – Basic Costing, Cost Sheet, Material Cost and Employee Cost)

COST ACCOUNTING

SECTION-A

ANS. 1

- (i) (b) Sales manager's salary
- (ii) (b) Conversion cost
- (iii) (b) 3.75%
- (iv) (b) Functions
- (v) (c) 1.943 minutes
- (vi) (c) Engineered cost
- (vii) (a) Cost allocation
- (viii) (b) ₹ 22,25,000
- (ix) (d) The ordering cost is equal to the carrying cost
- (x) (c) Engineering department
- (xi) (a) ₹10,200
- (xii) (d) Number of vehicle
- (xiii) (b) 2,500 units
- (xiv) (c) 500 units 20 orders
- (xv) (c) There is no idle time cost



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SECTION-B

ANS. 2 (a)

(i) Annual Demand = 1,00,000 units

Carrying cost = $10 \times 50\% = ₹5$

EOQ = $(2 \times \text{Annual demand} \times \text{Ordering cost} / \text{Carrying cost})^{1/2}$

EOQ = $(2 \times 1,00,000 \times 500 / 5)^{1/2}$

EOQ = 4,472 units (Approx.)

(ii) Evaluation of Discount offer:

If lot size is EOQ = 4,472 units

Carrying cost = $4,472 \times 5 \times 50\% = ₹11,180$

Ordering cost = $1,00,000 / 4,472 = 23 \text{ orders @ } ₹500 = ₹11,500$

Purchase price = $1,00,000 \times 10 = ₹10,00,000$

Total Cost = ₹10,22,680

If lot size is 4,500 units

Purchase price = $10 - 3\% = ₹9.70$

Carrying cost per unit = $9.70 \times 50\% = ₹4.85$

Carrying cost = $4,500 \times 4.85 \times 1/2 = ₹10,913$

Ordering cost = $1,00,000 / 4,500 = 23 \text{ orders @ } ₹500 = ₹11,500$

Purchase price = $1,00,000 \times 9.70 = ₹9,70,000$

Total Cost = ₹9,92,413

If lot size is 6,000 units

Purchase price = $10 - 3.5\% = ₹9.65$

Carrying cost per unit = $9.65 \times 50\% = ₹4.825$

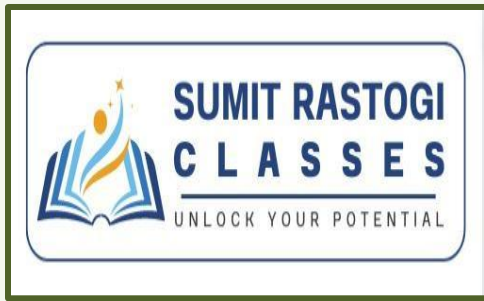
Carrying cost = $6000 \times 4.825 \times 1/2 = ₹14,475$

Ordering cost = $1,00,000 / 6,000 = 17 \text{ orders @ } ₹500 = ₹8,500$

Purchase price = $1,00,000 \times 9.65 = ₹9,65,000$

Total Cost = ₹9,87,975

Note: Comparison as above shows that at 6,000 order quantity, the total inventory cost is the least. Hence, ordering quantity should be 6,000 units.



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ANS. 2 (b)

Let X be the Material Cost and Y be the Wage Rate.

$$\text{Earnings of Mohan (Rowan)} = 600 \times Y + (1,000 - 600) \times 600/1,000 \times Y = 840Y$$

$$\text{Earnings of Sohan (Halsey)} = 800 \times Y + (1,000 - 800) \times 50\% \times Y = 900Y$$

Total Factory cost = Material + Wages + Overheads

In case of Mohan:

$$72,800 = X + 840Y + 600 \times 10$$

$$66,800 = X + 840Y \text{ -----(1)}$$

In case of Sohan:

$$76,000 = X + 900Y + 800 \times 10$$

$$68,000 = X + 900Y \text{ -----(2)}$$

Solving Both the equations, we get

$$1,200 = 60Y$$

$$Y = ₹20$$

Putting Y = 20 in equation (1), we get

$$66,800 = X + 840 \times 20$$

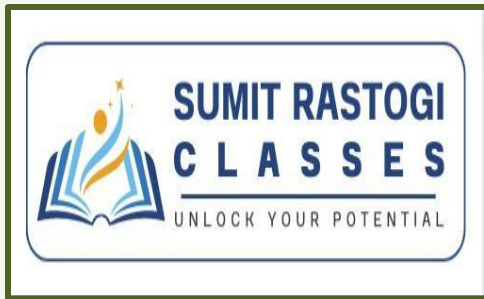
$$X = ₹50,000$$

(i) Normal Wage Rate = ₹20 per hour

(ii) Material Cost = ₹50,000

(iii) Statement of Factory Cost

Particulars	Mohan (₹)	Sohan (₹)
Material Cost	50,000	50,000
+ Wages:		
Mohan (840 × 20)	16,800	
Sohan (900 × 20)		18,000
+ Factory Overheads:		
Mohan (600 × 10)	6,000	
Sohan (800 × 10)		8,000
Factory Cost	72,800	76,000



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ANS. 3 (a) Statement showing computation of total inventory cost at different order size

Particulars	200	250	800	2,000	4,000
Purchasing cost (A)	24,000	23,600	23,200	22,800	22,400
No. of orders (4,000/Ordering Quantity)	20	16	5	2	1
Ordering cost (No. of order × ₹6) (B)	120	96	30	12	6
Average inventory (Ordering Quantity × ½)	100	125	400	1,000	2,000
Carrying cost per unit (Price per ton × 25%)	1.50	1.475	1.45	1.425	1.40
Total Carrying cost (Average inventory × CC per unit) (C)	150	184	580	1,425	2,800
Total Cost (A+B+C)	24,270	23,880	23,810	24,237	25,206

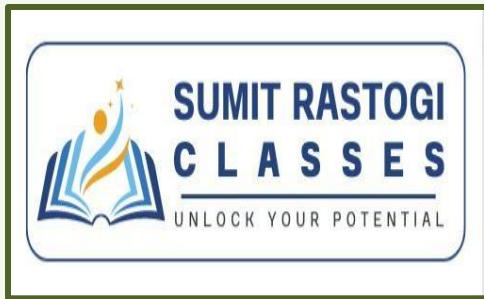
For the above computations the best quantity to order is **800 units**.

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

ANS. 3 (b)

STATEMENT OF COST

Particulars		Amount (₹)
Direct Material Local (20,00,000 × 110%)		22,00,000
+ Import of Raw Material		2,00,000
+ Direct Labour		17,00,000
+ Direct Expenses		3,00,000
Prime Cost		44,00,000
+ Factory Overheads:		
Indirect labour	4,00,000	
Stores and spare parts	1,40,000	
Fuel	3,00,000	
Depreciation on plant	2,00,000	
Excise duty	4,00,000	
Salaries of work personnel	2,00,000	16,40,000
Works Cost		60,40,000
+ Office Overheads:		
Administrative office expenses	4,00,000	
Salary of managing director	2,00,000	
Fees of directors	40,000	6,40,000
Cost of Production		66,80,000
+ Selling & Distribution Overheads:		
Expenses on advertisement	3,20,000	



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Selling expenses	5,00,000	
Packaging and distribution expenses	3,40,000	11,60,000
Cost of Sales		78,40,000
+ Profit (78,40,000 × 20/80)		19,60,000
Sales		98,00,000
Selling Price per unit (Before Subsidy)	98,00,000/50,000	196
- Subsidy		40
Tender Price (After Subsidy)		156

ANS. 4 (a)

(i) Let ₹x per hour be the normal wage rate.

Wages at location A will be ₹36x and at location B - it will be ₹48x on the basis of actual time taken, as against 60 hours permitted.

For time saved, bonus will be payable as under:

Location A:

Bonus under Rowan system = $(60 - 36) \times 36/60 \times x = 14.4x$

Total wages = ₹36x + ₹14.4x = 50.4x

Overheads @ ₹20 per hour worked = 36hrs. × ₹20 = ₹720

Therefore, Total Conversion Cost is $(50.4x + ₹720) = ₹1,224$

$50.4x = ₹504x$

$x = ₹504/50.4 = ₹10$

So, Bonus = $14.4x = 14.4 \times ₹10 = ₹144$

Location B:

Bonus under Halsey system = $(60 - 48) \times 50\% \times x = 6x$

Total wages = ₹48x + 6x = 54x

Overheads @ ₹20 per hour worked = 48 hrs. × ₹20 = ₹960

Therefore, Total Conversion Cost is $(54x + ₹960) = ₹1,500$

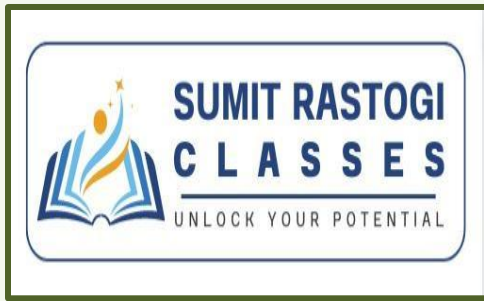
$54x = ₹540$

$x = ₹540/54 = ₹10$

So, Bonus = $6x = 6 \times ₹10 = ₹60$

(ii) **COMPARATIVE CONVERSION COST**

Particulars	Location A (₹)	Location B (₹)
Wages @10 per hour	360	480
+ Bonus	144	60
+ Overheads	720	960
Total	1,224	1,500



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ANS. 4 (b) STATEMENT OF COST AND PROFIT FOR SUPER PEN

Particulars	Amount (₹)	Per Unit (₹)
Direct material (8,00,000 × 2/5)	3,20,000	8.00
+ Direct labour (4,48,000 × 5/14)	1,60,000	4.00
Prime Cost	4,80,000	12.00
+ Production overheads (1,92,000 × 40,000/1,60,000)	48,000	1.20
Works Cost	5,28,000	13.20
+ Administration overheads (1,60,000 × 200%)	3,20,000	8.00
Cost of Production	8,48,000	21.20
- Closing Stock (8,48,000 × 4,000/40,000)	84,800	-
Cost of Goods Sold	7,63,200	21.20
+ Selling costs (36,000 × 1)	36,000	1.00
Cost of Sales	7,99,200	22.20
+ Profit (Balancing figure)	2,80,800	7.80
Sales (36,000 × 30)	10,80,000	30.00

Working Note:

(i) Direct Material:

Normal Pen = X, Super Pen = 2X

Total Direct Material:

Normal Pen = 1,20,000X

Super Pen = 40,000 × 2X = 80,000X

Ratio = 3:2

(ii) Direct Labour

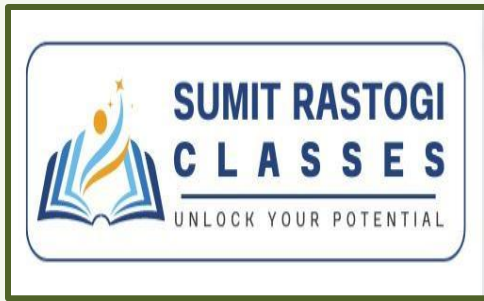
Super Pen = Y, Normal Pen = 0.60Y

Total Direct labour:

Normal Pen = 1,20,000 × 0.6Y = 72,000Y

Super Pen = 40,000 × Y = 40,000Y

Ratio = 9:5



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ANS. 5 (a)

Quantity Sold = 1,25,000 + 1,50,000 + 1,00,000 - 1,30,000 = 2,45,000 liters.

Calculations using FIFO Method:

- (i) Closing stock = 30,000 × 7.10 + 1,00,000 × 7 = ₹9,13,000
- (ii) Cost of Goods sold = 1,25,000 × 6.50 + 1,20,000 × 7.10 + 45,000 (Expenses) = ₹17,09,500
- (iii) Profit/Loss = 19,25,000 - 17,09,500 = ₹2,15,500

Calculations using LIFO Method:

- (i) Closing stock = 1,25,000 × 6.50 + 5,000 × 7.10 = ₹8,48,000
- (ii) Cost of Goods sold = 1,00,000 × 7 + 1,45,000 × 7.10 + 45,000 (Expenses) = ₹17,74,500
- (iii) Profit/Loss = 19,25,000 - 17,74,500 = ₹1,50,500

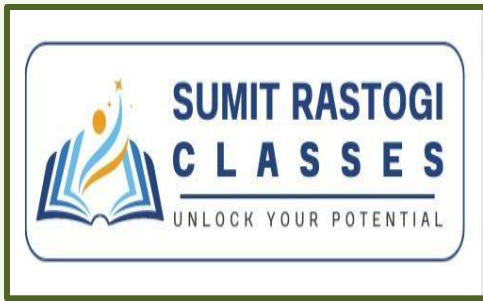
ANS. 5 (b)

Table Showing Labour Cost Per Article

Method of Payment	Hours worked	Weekly Earnings (₹)	No. of Articles	Labour Cost Per Article (₹)
Existing time rate	49	8,425	120	70.21
Straight piece rate	40	8,640	135	64.00
Rowan premium plan	40	9,007	135	66.72
Halsey premium plan	40	8,600	135	63.70

Working Notes

- (i) **Existing Time Rate Weekly Wages**
 = 40 hours @160 per hr. + 9 hours @ ₹225 per hr. = ₹6,400 + ₹2,025 = ₹8,425
- (ii) **Piece Rate System Basic**
 Time 5 hours for 15 articles
 Cost of 15 articles at hourly rate of ₹160/hr. + 20% = ₹800 + ₹160 = ₹960
 ∴ Rate per article = ₹960 ÷ 15 = ₹64.
Earning for the week = 135 articles x ₹64 = ₹8,640
- (iii) **Rowan Premium System**
 Basic Time = 5 hours for 15 articles + 50% of Time
 = 7.5 hours for 15 articles or 30 minutes per article
 ∴ Standard Time allowed for 135 articles = 67.50 hours
 Actual time taken for 135 articles = 40 hours
Earnings = 40x160 + (67.50-40) × 40/67.50 x 160 = ₹9,007
- (iv) **Halsey Premium System**
Earnings = 40x160 + (67.50-40) × 50% × 160 = ₹8,600



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ANS. 6 (a)

(i) Minimum stock of A:

$$\text{Reorder level - (Average rate of consumption} \times \text{Average time required)} \\ = 8,000 \text{ kgs. - (200} \times 10 \times 2) \text{ kgs.} = \mathbf{4,000 \text{ kgs.}}$$

(ii) Maximum stock of B:

$$\text{Reorder level - (Minimum consumption} \times \text{Minimum delivery period)} + \text{Reorder quantity} \\ = 4,750 \text{ kgs. - (175} \times 4 \times 3) \text{ kgs.} + 5,000 \text{ kgs} = 9,750 - 2,100 = \mathbf{7,650 \text{ kgs.}}$$

(iii) Reorder level of C:

$$\text{Maximum delivery period} \times \text{Maximum usage} = 4 \times 225 \times 6 = \mathbf{5,400 \text{ kgs.}}$$

(iv) Average stock level of A:

$$\text{Minimum stock level of A} + \frac{1}{2} \text{ Reorder quantity of A} \\ = 4,000 \text{ kgs.} + \frac{1}{2} \times 10,000 \text{ kgs.} = 4,000 \text{ kgs.} + 5,000 \text{ kgs.} = \mathbf{9,000 \text{ kgs.}}$$

OR

$$\frac{1}{2} \times (\text{Minimum Stock level of A} + \text{Maximum Stock Level of A}) \\ = \frac{1}{2} \times (4000 + 16,250) = \mathbf{10,125 \text{ Kgs.}}$$

Working note:

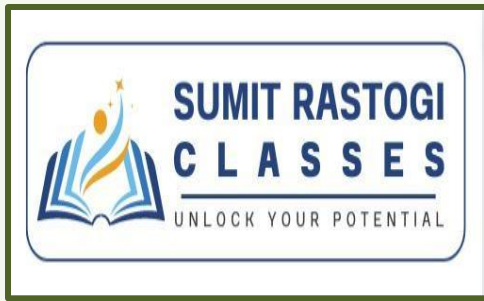
Maximum stock level of A:

$$= \text{ROL} + \text{ROQ} - (\text{Minimum consumption} \times \text{Minimum reorder period}) \\ 8,000 \text{ kgs.} + 10,000 \text{ kgs.} - [(175 \times 10) \times 1] \text{ kgs.} = \mathbf{16,250 \text{ kgs.}}$$

ANS. 6 (b)

Statement of Cost of Sales and Profits for 2018 (300 Typewriters)

Particulars	Working	Amount (₹)	Cost per unit (₹)
Direct Material	$1,20,000 \times 125\% \times 300/200$	2,25,000	750
+ Direct Wages	$1,80,000 \times 110\% \times 300/200$	2,97,000	990
Prime Cost		5,22,000	1,740
+ Factory Overheads	$75,000 \times 5,22,000/3,00,000$	1,30,500	435
Factory Cost		6,52,500	2,175
+ Office Overheads	$90,000 + 30,000 + 15,000$	1,35,000	450
Cost of Production		7,87,500	2,625
+ Selling Expenses	$45,000 \times 300/200$	67,500	225
Total Cost		8,55,000	2,850
+ Profit	$8,55,000 \times 10/90$	95,000	316.67
Selling Price		9,50,000	3,166.67

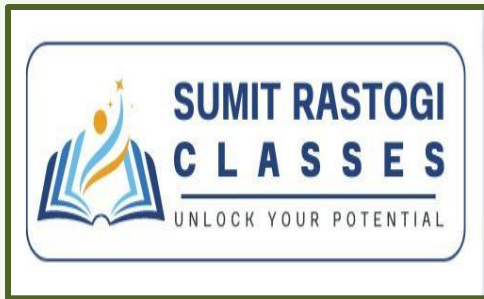


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ANS. 7 (a)

Statement Showing Relevant Calculations

Particulars	K	L	M
No. of units produced	10,000	8,000	14,400
Standard Time (Hours)	$(10,000 \times 156) / (100 \times 60)$ = 260	$8,000 \times 3/100$ = 240	$14,400 \times 1.5/100$ = 216
Time Taken (Hours)	200	216	184
(i) Bonus Hours = Time Saved (Hours)	60	24	32
Rate of Bonus per hour (₹)	$25 \times 60\% = 15$	$40 \times 60\% = 24$	$30 \times 60\% = 18$
(ii) Amount of Bonus (₹)	$60 \times 15 = 900$	$24 \times 24 = 576$	$32 \times 18 = 576$
Overtime (Hours)	$200 - 176 = 24$	$216 - 176 = 40$	$184 - 176 = 8$
Overtime wages (₹)	$20 \times 25 \times 4/3 + 4 \times 25 \times 3/2$ = 816.67	$20 \times 40 \times 4/3 + 20 \times 40 \times 3/2 = 2,266.67$	$8 \times 30 \times 4/3$ = 320
Basic Wages (₹)	$176 \times 25 = 4,400$	$176 \times 40 = 7,040$	$176 \times 30 = 5,280$
(iii) Total Wages (₹)	$4,400 + 900 + 816.67$ = 6,116.67	$7,040 + 576 + 2,266.67$ = 9,882.67	$5,280 + 576 + 320$ = 6,176
Saleable units	$10,000 - 400 = 9,600$	$8,000 - 160 = 7,840$	$14,400 - 1,600 = 12,800$
(iv) Direct Wage Cost Per 100 saleable units	$6,116.67 \times 100/9,600$ = 63.71	$9,882.67 \times 100/7,840$ = 126.05	$6,176 \times 100/12,800$ = 48.25



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ANS. 7 (b)

Statement of Cost of Sales and Profit for 2017-18 (30,000 Units)

Particulars	Working	Amount (₹)	Cost per unit (₹)
Direct Material	$30,00,000 \times 125\% \times 88\%$	49,50,000	165
+ Direct Wages	$\times 30,000/20,000$ $22,50,000 \times 120\% \times 30,000/20,000$	40,50,000	135
Prime Cost		90,00,000	300
+ Factory Overheads:			
• Variable	$(20,62,500 - 7,50,000) \times 90,00,000/52,50,000$	22,50,000	75
• Fixed		7,50,000	25
Factory Cost		1,20,00,000	400
+ Office and Adm. Overheads	$8,50,000 \times 120\%$	10,20,000	34
Cost of Production		1,30,20,000	434
+ Selling & Distribution overheads	$2,50,000 \times 80\% \times 30,000/20,000$	3,00,000	10
Total Cost		1,33,20,000	444
+ Profit	$1,33,20,000 \times 25\%$	33,30,000	111
Sales		1,66,50,000	555

Working note:

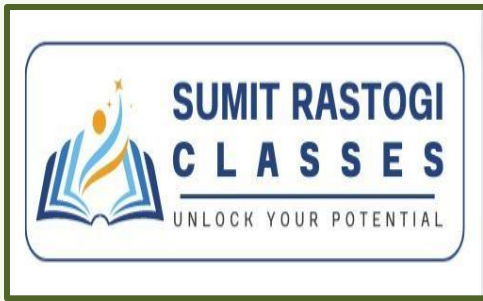
Profit percentage on cost for the year 2016-17 = $(16,82,500/84,12,500) \times 100 = 20\%$

Desired Profit % for 2017-18 = $20 + 5 = 25\%$ on Cost.

ANS. 8 (a) Measures to Reduce Labour Turnover:

Labour Turnover may be reduced by removing its avoidable causes and taking preventive remedial measures. The various measures may be as under:

- Efficient, sympathetic and impartial personnel administration.
- Effective communication system to keep the workers informed on matters that affect them.
- Improving working conditions and placing the right man on the right job.
- Job enrichment to reduce boredom and monotony and to provide job satisfaction.
- Introducing fair rates of pay and allowance/s and incentives, pension, gratuity, etc.
- Strengthening welfare measures.
- Augmenting recreational activities and schemes.



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ANS. 8 (b)

Difference between Scrap and Spoilage

SCRAP	SPOILAGE
Incidental material residue in a process in small amounts	Damages due to defective working
It has low market value	Market value can range from zero to substantial portion of selling price
Normally involves material wastage	It involves wastage of Material, Labour, Direct Expenses and Overheads up to point of spoilage.
Scrap should always be physically available	The components/materials are damaged in such a way that they cannot be bought back to normal specifications by repairs or reconditioning

ANS. 8 (c)

The role of the cost accountants in a manufacturing organisation can be enumerated as follows:

- To analyze various elements of cost of production/services such as material, labour, overhead expenses etc.
- To introduce appropriate costing methods in the organisation so as to facilitate management with the knowledge of cost of production/services for managerial decision making.
- To determine the cost of the new product/service in order to facilitate management in arriving at the correct pricing decisions.
- To determine the feasibility and profitability of the various project proposals considered by the management.
- To analyze variances against standard by reason to enable concerned department to initiate corrective action.
- Collection, collation of extraneous information for management to compare the company's performance with that of peers and the industry for better appreciation and decision-making.