

**Cost & Management Accounting**  
**Suggested**

Roll No.....

Maximum Marks - 100

Total No. of Questions: 6

Total No. of Printed Pages - 5

Time Allowed - 3 Hours

Marks

**All questions are compulsory. Working notes should form part of the answer.**

**Make assumptions wherever necessary.**

1. Maharjan Industries is feeling the effects of a general recession in the industry. Its budget for the coming year is based on an output of only 500 tonnes of castings a month, which is less than half of its capacity. The prices of castings vary with the composition of the metal and the shape of the mould, but they average Rs. 175 a tonne. The following details are from the monthly production cost budget at the 500 tonne level:

Particulars	Core making (Rs.)	Melting and pouring (Rs.)	Moulding (Rs.)	Clearing & grinding (Rs.)
Labour	10,000	16,000	6,000	4,500
Variable overhead	3,000	1,000	1,000	1,000
Fixed overhead	5,000	9,000	2,000	1,000
Total	18,000	26,000	9,000	6,500
Labour & overhead Per direct labour hour	9.00	6.50	6.00	5.20

Operating at this level has brought the company to the brink of break-even. It is feared that if the lack of work continues, the company may have to lay-off some of the most highly skilled workers whom it would be difficult to get back when the volume picks up later on. No wonder, the works Manager at his juncture, welcomes an order for 90,000 castings. To be delivered on a regular schedule during the next six months. As the immediate concern of the works Manager is to keep his work force together, occupied, he does not want to lose the order and is ready to recommend a quote on a no profit on loss basis. Materials required would cost Re. 1 per casting after deducting scrap credits. The direct labour hours per casting required for each department would be:

Core making	0.09
Melting & pouring	0.15
Molding	0.06
Cleaning & grinding	0.06

Variable overhead would bear a normal relationship to labour cost in the melting and pouring department and in the moulding department. In core making, cleaning and grinding however, the extra labour requirements would not be accompanied by proportionate increases in variable overhead. Variable overhead would increase by Rs. 1.20 for every additional labour hour in core making and by 30 paise for every additional labour hour in cleaning and grinding. Standard wage rates are in operation in each department and no labour variances are anticipated. To handle an order as large as this, certain increases in fixed factory overhead would be necessary amounting to Rs. 1,000 a month for all departments put together. Production for this order would be spread evenly over the six months period.

Required:

20

- a) Prepare a revised monthly labour and overhead cost budget, reflecting the addition of this order.
- b) Determine the lowest price at which quotation can be given for 90,000 casting without incurring a loss.

Answer a)

**Maharjan Industries**  
**Revised monthly Labour & overhead cost budget**  
**(After the acceptance of an order for 90,000 castings)**

	Core Making	Melting and pouring	Moulding	Clearing & grinding	Total
	Rs.	Rs.	Rs.	Rs.	
Labour	16,750	25,000	9,600	7,740	59,090
Variable overhead	4,620	1,563	1,600	1,270	9,053
Fixed overhead	5,000	9,000	2,000	1,000	17,000
Total	26,370	35,563	13,200	10,010	85,143
Incremental fixed factory cost					1,000
Total labour and overhead cost					86,143

Working Notes:

- (i) Current labour hours per month in each department are obtained by dividing the total labour and overheads by the figure of labour and overheads per direct labour hour as follows:

Core Making	Melting and pouring	Moulding	Clearing & grinding
Rs. 18,000/9 hrs = 2,000 hrs	Rs. 26,000/6.50hrs = 4,000 hrs	Rs. 9,000/6hrs = 1,500 hrs	Rs. 6,500/5.2hrs = 1,250hrs

- (ii) 90,000 castings spread over 6 months give a production of 15,000 castings per month. Incremental labour hours per month are got by multiplying the 15,000 castings by direct labour hours per casting as under:

Core Making	Melting and pouring	Moulding	Clearing & grinding
Rs. 15,000×0.09 = 1,350 hrs	Rs. 15,000×0.15 = 2,250 hrs	Rs. 15,000×0.06 = 900 hrs	Rs. 15,000×0.09 = 900 hrs

- (iii) Wages rate per hour is found by dividing labour cost by direct labour hours as under:

Core Making	Melting and pouring	Moulding	Clearing & grinding
Rs. 10,000/2,000 hrs = Rs.5	Rs. 16,000/4,000 hrs = Rs.4	Rs.6,000/1,500 hrs = Rs.4	Rs. 4,500/1,250 hrs = Rs.3.60

- (iv) Revised monthly labour cost:

In Core making:	Rs. 10,000 + (1,350×Rs. 5)	=	Rs. 16,750
In Melting & pouring:	Rs. 16,000 + (2,250×Rs. 4)	=	Rs. 25,000
In Moulding:	Rs. 6,000 + (900×Rs. 4)	=	Rs. 9,600
In cleaning & grinding:	Rs. 4,500 + (900×Rs. 3.60)	=	Rs. 7,740

- (v) Revised monthly variable overhead cost:

(3)

In core making.

Existing charges Rs. 3,000 + Rs. 1.20×1,350 (incremental hours)  
= Rs. 3,000 + Rs. 1,620  
= Rs. 4,620

In the Melting and pouring department.

It is 1/16 of labour cost. Hence revised variable overhead cost.  
= Rs. 25,000×1/16  
= Rs. 1,563

In moulding department

It is 1/6 of labour cost. Hence revised variable overhead cost  
=Rs 9600×1/6  
=Rs 1600

In clearing & grinding Department.

Existing charges Rs. 1,000 plus Rs. 0.30×900 (incremental hours)  
= Rs. 1,000+ Rs. 270  
= Rs. 1,270

- (b) Determination of the lowest price at which quotation can be given for 90,000 castings without incurring a loss:

Particular	Amount	Amount
Materials cost (15,000 casting per month @ Re. 1 each)		15,000
<u>Labor and Overhead Cost:</u>		
Revised budget (above)	86,143	
Less: Current budget (Rs.18,000 +Rs. 26,000 +Rs. 9,000+Rs. 6,500)	59,500	26,643
<b>Total Incremental cost for 15,000 castings</b>		<b>41,643</b>

Lowest price at which quotation can be given for 90,000 castings:

$\frac{\text{Rs.41,643}}{15,000 \text{ hrs}} \times 90,000 \text{ casting}$   
= Rs. 249,858

2.

- a) Following data refer to the month of December 2014:

	<u>Job 410</u>	<u>Job 411</u>	<u>Total</u>
i) Opening balance of job on 2014:			
1 <sup>st</sup> December	<u>(Rs.)</u>	<u>(Rs.)</u>	<u>(Rs.)</u>
Direct material	80	420	500
Direct Labour	150	450	600
Factory overheads	<u>200</u>	<u>400</u>	<u>600</u>
	<u>430</u>	<u>1,270</u>	<u>1,700</u>

- ii) Direct material requisition during the month of December, 2014:

<u>Job No.</u>	<u>(Rs.)</u>
410	120
411	280
412	225
413	<u>300</u>
	<u>925</u>

(4)

iii) Direct Labour Distribution	<u>Job No</u>	<u>Hours</u>	<u>(Rs.)</u>
	410	400	600
	411	200	450
	412	300	675
	413	<u>100</u>	<u>225</u>
		<u>1,000</u>	<u>1,950</u>

iv) Factory overheads are applied to jobs on production according to direct labour hour rate which is Rs. 2.

v) Factory overhead incurred in December, 2014 Rs. 2,100

vi) Job Nos. 411 & 412 were completed during the month. They were billed to customer at a price which included 15% of the price of the job for selling and distribution expenses and another 10% of price for the profit.

Required:

12

(a) Job cost sheet for Job Nos. 411 and 412

(b) Determine the price for the job;

(c) Calculate the value of work in progress; and

(d) Prepare an income statement showing gross profit for the month of December. 2014.

b) From the following data for the year ended 31<sup>st</sup> December, 2014 calculate the inventory turnover ratio of the two items and put forward your comment on them,

4

	<u>Material P</u>	<u>Material Q</u>
Opening Stock 1/1/2014	Rs. 20,000	Rs. 9,000
Purchase during the year	104,000	54,000
Closing Stock 31/12/2014	12,000	22,000

c) Mr X has Rs. 200,000 investment in his business firm. He wants a 15 percent return on his money. From an analysis of recent cost figures, he finds that his variable cost of operating is 60% of sales; his fixed costs are Rs. 80,000 per year. Show computation to answer the following question:

4

i) What sales volume must be obtained to break even?

ii) What sales volume must be obtained to get 15 percent return on investment?

iii) Mr. X estimates that even if he closed the doors of his business, he would incur Rs. 25,000 as expenses per year. At what sales would he be better off by locking his business up.

Answer a)

### Job Cost Sheet

	<b>Job No. 411</b>	<b>Job No 412</b>
Opening balance on 1.12.2014	1270.00	Nil
Direct material during month	280.00	225.00
Direct labour	450.00	675.00
Factory Overhead @ Rs. 2 per hour	400.00	600.00
Factory cost	2400.00	1500.00
Selling and distribution expenses (Note 1)	480.00	<u>300.00</u>
Cost of sales	2880.00	1800.00
Profit (Note1)	320.00	<u>200.00</u>
Billing Price of job	3200.00	<u>2000.00</u>

**Work in progress**

<b>Particular</b>	<b>Amount</b>
Opening balance	1,700
Cost incurred during the month	
Material	925
Labour	1,950
Overhead (1000×Rs 2)	2,000
Less: Jobs completed	
Job No. 411	2,400
Job No. 412	1,500
Balance of W.I.P	2,675

**Income statement**

<b>Particular</b>	<b>Amount</b>
Selling Price (Rs. 3,200+Rs. 2,000)	5,200
Less: Factory cost (2,400+Rs. 1,500)	3,900
Gross Profit	1,300

Note.1

Suppose Price		100
Less Selling exp.	15	
Profit	<u>10</u>	25
Factory Cost		75

For job No 411:

- 1) If factory cost is 75, selling expenses = 15  
If factory cost is 2,400 selling expenses=(15÷75)×2,400=480
- 2) If factory cost is 75, profit=Rs.10  
If factory cost is 2,400 profit=(10÷75)×2400=Rs. 320

For job No 412:

- 1) If factory cost is 75, selling expenses=15  
If factory cost is 1,500 selling expenses=(15÷75)×1500=Rs. 300
- 2) If factory cost is 75, profit=Rs. 10  
If factory cost is 1,500 profit=(10÷75)×1500=Rs. 200

b) First of all it is necessary to find out the cost of material consumed.

<u>Cost of material consumed</u>	<u>Materials P</u>	<u>Materials Q</u>
Opening stock	Rs. 20,000	Rs. 9,000
Add: Purchases	<u>1,04,000</u>	<u>54,000</u>
	1,24,000	63,000
Less: Closing stock	<u>12,000</u>	<u>22,000</u>
Material consumed	<u>1,12,000</u>	<u>41,000</u>
Average inventory(Op. Stock + Cl. Stock) ÷2	16,000	15,500
Inventory Turnover ratio( Consumption ÷Avg. inventory)	7 times	2.64 times
Inventory Turnover (No. of days): (No of days in a year ÷ I.T.Ratio)	52 days	146 days

Comments: Material P is more fast moving than Material Q.

c) Suppose sales	Rs.100
Variable cost	60
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(6)

Contribution	40
PV Ratio	40%
Fixed cost	Rs. 80,000

- i) B.E Point = Fixed cost ÷ P/V Ratio =  $80,000 \div 40\%$   
= Rs. 2,00,000
- ii) 15% return on Rs. 200,000 Rs. 30,000  
Fixed cost 80,000
- |                       |  |
|-----------------------|--|
| Contribution required | 1,10,000                                   |
| Sales volume required | =Rs. $110,000 \div 40\%$<br>or Rs. 275,000 |
- iii) Fixed cost even if business is locked up =Rs. 25,000  
Minimum sales required to meet this cost: Rs.  $25,000 \div 40\%$  or Rs 62,500  
Mr X will be better off if the sale is more than Rs. 62,500

3.

- a) Action Plan Manufacturers normally produce 8,000 units of their product in a month, in their Machine Shop. For the month of January, they had planned for a production of 10,000 units. Owing to a sudden cancellation of a contract in the middle of January, they could only produce 6,000 units in January.

Indirect manufacturing costs are carefully planned and monitored in the Machine Shop and the Foreman of the shop is paid a 10% of the savings as bonus when in any month the indirect manufacturing cost incurred is less than the budgeted provision.

Indirect Manufacturing Normal month	Expenses for January (Rs.)	Planned for January (Rs.)	Actual in costs (Rs.)
Salary of foreman	1,000	1,000	1,000
Indirect labour	720	900	600
Indirect material	800	1,000	700
Repairs and maintenance	600	650	600
Power	800	875	740
Tools consumed	320	400	300
Rates and taxes	150	150	150
Depreciation	800	800	800
Insurance	100	100	100
	5,290	5,875	4,990

Is the Foreman entitled to any bonus for the performance in January? Substantiate your answer with facts and figures.

10

- b) ABC Ltd is a construction company, which has undertaken three contracts. Information for the previous year along with other details is provided to you below;

	<u>Contract A</u> (Rs. 000)	<u>Contract B</u> (Rs. 000)	<u>Contract C</u> (Rs. 000)
Contract price	1,760	1,485	2,420
Balances brought forward at the beginning of the year:			

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(7)

Material on site		20	30
Written down value of plant and machinery		77	374
Wages accrued		5	10
Transactions during previous year:			
Profit previously transferred to profit and loss a/c			35
Cost of work certified (cost of sales)		418	814
Transactions during current year:			
Material delivered to site	88	220	396
Wages paid	45	100	220
Salaries and other cost	15	40	50
Written down value of plant issued to site	190	35	
Head office expenses apportioned during the Year	10	20	50
Balances c/fwd at the end of the year:			
Material on site	20		
Written down value of plant and machinery	150	20	230
Wages accrued	5	10	15
Value of work certified at the end of the year	200	8 60	2,100
Cost of work not certified at the end of the year			55

The agreed retention rate is 10% of the value of work certified by the contractee's architect. Contract C is scheduled to be handed over to the contractee in the near future. It is estimated that Rs. 305,000 shall be needed to be spent in addition to what has been tabulated above to complete this particular contract. This amount includes an allowance for plant depreciation, construction services and for contingencies.

Required:

10

Prepare contract accounts for each of the three contracts and recommend how much profit or loss should be taken up for the year.

Answer a)

**Flexible Budget of "Action Plan Manufactures"  
(for the month of January)**

Indirect manufacturing Cost	Nature of cost	Expenses for a normal month	Planned expenses for January	Expenses as per flexible budget for the month of January	Actual expenses for the month of January	Difference Increased (decreased) January
		Rs.	Rs.	Rs.	Rs.	Rs.
		-1	-2	-3	-4	-5 (6) = (5) - (4)
Salary of foreman	Fixed	1,000	1,000	1,000	1,000	Nil
Indirect labour (Refer to Working note 1)	Variable	720	900	540	600	60
Indirect material (Refer to Working note 2)	Variable	800	1,000	600	700	100
Repair and maintenance (Refer to Working note 3)	Semi-variable	600	650	550	600	50
Power (Refer to Working note 4)	Semi-variable	800	875	725	740	15
Tools consumed (Refer to Working note 5)	Variable	320	400	240	300	60
Rates and taxes	Fixed	150	150	150	150	Nil

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		(8)					
Depreciation	Fixed	800	800	800	800	Nil	
Insurance	Fixed	100	100	100	100	Nil	
		5,290	5,875	4,705	4,990	285	

**Conclusion :** The above statement of flexible budget clearly shows that the concern's expenses in the month of January have increased from Rs. 4,705 to Rs. 4,990. Under such circumstances the Foreman of the company is not at all entitled for any performance bonus in January.

Working Notes:

Working notes :

1. Indirect labour cost per unit  $\frac{\text{Rs } 720}{8,000} = 0.09\text{P.}$

Indirect labour for 6,000 units  $= 6,000 \times 0.09 = \text{Rs. } 540.$

2. Indirect material cost per unit  $\frac{\text{Rs } 800}{8,000} = 0.10\text{P}$

Indirect material for 6,000 units  $= 6,000 \times 0.10\text{P} = \text{Rs. } 600$

3. According to high and low point method of segregating semi-variable cost into fixed and variable components, following formulae may be used.

Variable cost of repair and maintenance per unit

$$= \frac{\text{Change in expense level}}{\text{Change in output level}} = \frac{\text{Rs } 650 - \text{Rs } 600}{2,000} = 0.025 \text{ P.}$$

For 8,000 units

Total Variable cost of repair and maintenance (8000 units X 0.025) = Rs. 200

Fixed repair & maintenance cost = Rs. 400

Hence at 6,000 units output level, total cost of repair and maintenance should be

$$= \text{Rs. } 400 + \text{Rs. } 0.025 \times 6,000 \text{ units}$$

$$= \text{Rs. } 400 + \text{Rs. } 150$$

$$= \text{Rs. } 550$$

4. Variable cost of power per unit  $= \frac{\text{Rs } 875 - \text{Rs } 800}{2,000} = 0.0375 \text{ P}$

For 8,000 units

Total variable cost of power (8000 units X 0.0375) = Rs. 300

Fixed cost of Power = Rs. 500

Hence, at 6,000 units output level, total cost of power should be

$$= \text{Rs. } 500 + \text{Rs. } 0.0375 \times 6,000 \text{ units}$$

$$= \text{Rs. } 500 + \text{Rs. } 225$$

$$= \text{Rs. } 725$$

5. Tools consumed cost for 8,000 units = Rs. 320

Hence, tools consumed cost for 6,000 units  $= (\text{Rs. } 320 / 8,000 \text{ units}) \times 6,000 \text{ units}$

$$= \text{Rs. } 240$$



## b) Contract Accounts

(in Rs. '000)

	A	B	C		A	B	C
Material on site b/fwd		20	30	Wages accrued b/fwd		5	10
Plant on site b/fwd		77	374	Material on site c/fwd	20		
Material control a/c	88	220	396	Plant on site c/fwd	150	20	230
Wages control a/c	45	100	220	Cost of work not certified c/fwd			55
Salaries	15	40	50	Cost of sales – current period (balance) c/fwd	183	497	840
Plant control a/c	190	35					
Apportionment of HO expenses	10	20	50				
Wages accrued c/fwd	5	10	15				
	<b>353</b>	<b>522</b>	<b>1135</b>		<b>353</b>	<b>522</b>	<b>1135</b>
Cost of sales b/fwd	183	497	840	Attributable sales revenue (current period)*	183	442	1,122
Profit taken this period			282	Loss taken		55	
	<b>183</b>	<b>497</b>	<b>1122</b>		<b>183</b>	<b>497</b>	<b>1122</b>
Cost of work not certified b/fwd			55	Wages Accrued b/fwd	5	10	15
Material on site b/fwd	20						
Plant on site b/fwd	150	20	230				

\* Profit taken plus cost of sales for the current period or cost of sales less loss to date

**Note**

- Profit/loss on the three contracts are calculated by deducting the cost of sales (both previous years and current year) from the value of work certified

(Rs 000)

Contract A	17	(Rs 200 – Rs 183)
Contract B	(55)	(Rs 860 – Rs 915)
Contract C	446	(Rs 2,100 – Rs 1,654)

**Recommendation****Computation of profit taken for Contract C is as follows**

Particular	(Rs 000)
Cost of work certified (cost of sales to date = 814 + 840)	1,654
Cost of work not certified	55
Estimated costs to complete	305
Estimated cost of contract	2,014
Contract price	2,420
Anticipated profit	406

Profit taken =  $\frac{0.90 \times \text{Rs } 2,100}{\text{Rs } 2,420} \times \text{Rs } 406$

$$= \text{Rs } 3,17,000 - \text{Rs } 35,000 \text{ (Total Profit less profit previously transferred)}$$

$$= \text{Rs } 2,82,000$$

(10)

- No profit has been taken for Contract A as it is in very early stages of completion
- Prudence concept has been utilized for Contract B. All loss has been taken.

4.

- a) The following information has been extracted from the cost records of a manufacturing company during 2070/71.

	<u>Rs.</u>
<u>Stores</u>	
Opening balance	9,000
Purchases	48,000
Transfer from WIP	24,000
Issue to work-in –progress	48,000
Issue for repairs	6,000
Deficiency found in stock	1,800
<u>Work-in-progress</u>	
Opening balance	18,000
Direct wages applied	18,000
Overhead charged	72,000
Closing balance	12,000

The entire production of the year 2070/71 is sold at a profit of 10% on cost from work-in-progress. The total amount of wages paid and overhead incurred during the year was Rs. 21,000 and Rs. 75,000 respectively.

Required:

Draw General Ledger Adjustment account, Stores Ledger Control account, Work-in –progress Control account, Overheads Control Account and Costing Profit and Loss account.

- b) The machine shop of Siddhababa Metal Industries Ltd. has 8 identical Drilling Machines manned by 6 skilled operators. The machines cannot be worked without an operator wholly engaged on it. The original cost of all these 8 machines works out to Rs. 9.5 lakhs. Following particulars are gathered as on Chaitra end 2071 (First nine months of the financial year 2071/72).

Normal available hours per month	208
Absenteeism (without pay) – hours per month	18
Leave (with pay) – hours per month	20
Normal idle time unavoidable – hours per month	10
Average rate of wages per day of 8 hours	Rs. 200
Production bonus estimated	15% on wages
Value of power consumed	Rs. 12,075
Supervision and indirect labour	Rs. 4,950
Lighting and electricity	Rs. 1,800

In addition to the above, following annual costs are associated with the machine shop:

Repairs and maintenance including consumables 3% on value of machines. Insurance Rs .40, 000. Depreciation 10% on original cost. Other sundry works expenses Rs. 12,000 General Management expenses allocated Rs. 54,500.

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Required:

8

To work out a comprehensive machine hour rate for the Machine Shop.

c) What is Just in time (JIT) purchases? What are the advantages of such purchases?

2

Answer a)

**General Ledger Adjustment Account**

Particulars	Rs.	Particulars	Rs.
To Costing P&L A/c	1,32,000	By Balance b/d	27,000
To Balance c/d	51,000	By Stores Ledger Control A/c	48,000
		By Wages Control A/c	21,000
		By Overheads Control A/c	75,000
		By Costing P&L A/c (Profit)	12,000
	1,83,000		1,83,000

**Stores Ledger control Account**

Particulars	Rs.	Particulars	Rs.
To Balance b/d	9,000	By Work-in-progress	48,000
To General Ledger Adjustment A/c	48,000	By Overheads Control A/c	6,000
To Work-in-progress Control A/c	24,000	By Overheads Control A/c (Deficiency)	1,800*
		By Balance c/d	25,200
	81,000		81,000

\*Deficiency is treated as normal loss (Alternatively can be treated as abnormal Loss)

**Work-in-process control Account**

Particulars	Rs.	Particulars	Rs.
To Balance b/d	18,000	By Stores Ledger Control A/c	24,000
To Stores Ledger Control A/c	48,000	By Costing P&L A/c (Balancing figures being cost of finished goods)	1,20,000
To Wages Control A/c	18,000	By Balance c/d	12,000
To Overheads Control A/c	72,000		
	1,56,000		1,56,000

**Overheads control Account**

Particulars	Rs.	Particulars	Rs.
To Stores Ledger Control A/c	6,000	By Work-in-progress Control A/c	72,000
To Stores Ledger Control A/c	1,800	By Balance c/d (Under-absorption)	13,800
To Wages Control A/c (21,000-18,000)	3,000		
To General Ledger Adjustment A/c	75,000		
	85,800		85,800

**Costing Profit & loss Account**

Particulars	Rs.	Particulars	Rs.
To Work-in-progress Control A/c	1,20,000	By General Ledger Adjustment A/c (Sales: 1,20,000+12,000)	1,32,000
To General Ledger Adjustment A/c (Profit)	12,000		
	1,32,000		1,32,000

b) Working note

## 1) Total Machine hours utilized

Normal available hours p.m. per operator	208 hours
Less: Unutilised hours due to:	
Absenteeism                      18 hours	
Leave                                20 hours	
Idle time <u>10 hours</u>	48 hours
Total hours utilized p.m. per operator	160 hours
It is given in the question that the machines cannot work without an operator wholly engaged on it. Therefore, hours utilized for 6 operators (160 hours × 6 × 9 mths)	8,640 hours

## 2) Total wages paid to the operators

Average rate of wages per hour	= Rs. 200/8 hrs	= Rs.25
Normal hours for which wages are to be paid	= 208 hrs – 18 hrs	= 190 hrs.
Wages for 9 months for 6 operators @ Rs. 25/hr.	= 190 × 9 × 6 × 25	=Rs. 2,56,500

Computation of Comprehensive Machine hour rate for the Machine Shop

Particulars	Rs.
Operators wages (as above)	2,56,500
Production Bonus (15% of wages)	38,475
Power consumed	12,075
Supervision and indirect labour	4,950
Lighting and electricity	1,800
Repairs and maintenance (3% of Rs.9.5 lakhs) × 3/4	21,375
Insurance (given for 12 months; reduced to 3/4 <sup>th</sup> for 9 months)	30,000
Depreciation for 9 months (9.5 lakhs × 10% × 3/4)	71,250
Other sundry works expenses for 9 months	9,000
General management expenses for 9 months	40,875
Total overheads for 9 months	4,86,300
Comprehensive Machine Hour Rate = (Rs.4,86,300 / 8,640 hrs.)	Rs. 56.28 per hr.

c) Just in time (JIT) purchases means the purchase of goods or materials such that delivery immediately precedes their use.

**Advantages of JIT purchases:**

Main advantages of JIT purchases are as follows;

- The suppliers of goods or materials cooperate with the company and supply requisite quantity of goods or materials for which order is placed before the start of production.
- JIT purchases result in cost savings for example, the cost of stock out, inventory carrying, materials handling are reduced.
- Due to frequent purchases of raw materials, its issue price is likely to be very close to the replacement price. Consequently the method of pricing to be followed for valuing material issues becomes less important for companies using JIT purchasing.
- JIT purchasing are now attempting to extend daily deliveries to as many areas as possible so that the goods spend less time in warehouses or on store shelves before they are exhausted.

5. Express your views:

(2×5=10)

- Cost estimation and cost ascertainment are not inter-related. Do you agree?
- Interest should not be included in cost accounts since it is not an item of cost and would vary with different methods of financing.

**Answer a)** No. Cost ascertainment and cost estimation are actually inter-related.

Cost estimation is the process of pre-determining the cost of a certain product or job or order. Such pre-determination may be required for several purposes. Some of the purposes are Budgeting; Measurement of performance efficiency; Preparation of financial statements (valuation of stocks etc); Make or buy decisions; Fixation of the sale prices or products

Cost ascertainment is the process of determining costs on the basis of actual data. Hence, the computation of historical costs is cost ascertainment while the computation of future cost is cost estimation.

Both cost estimation and cost ascertainment are inter-related and are of the immense use to the management. In case a concern has a sound costing system, the ascertained costs will greatly help the management in the process of estimation of rationale accurate costs which are necessary for a variety of purposes stated above. Moreover, the ascertained cost may be compared with the pre-determined costs on a continuing basis and proper and timely steps be taken for controlling costs and maximizing profits.

b)

Treatment of interest as part of cost has always been controversial. However, the arguments for not including interest as part of cost is as follows:

Payment of interest depends entirely on the financing policies and financing pattern. A firm working with proprietor's capital only will have no interest to pay whereas a firm working with borrowed capital will have to pay a large amount of interest. In reality, whether a firm raises a certain sum of money from the proprietor or borrows from the outside does not make difference as far as production efficiencies are concerned. Hence, the cost where production is being made with proprietor's fund will have favorable results resulting wrong conclusions. Even if notional interest on proprietor's capital is included in the cost of production, this would result in as adding profit component since the closing stock will be valued at a higher figure.

Another difficulty is to work out the amount of capital on which interest is to be worked out. While a fixed capital is readily ascertainable, the working capital keeps on changing and may be used by different departments or projects not related to production at different points of time.

Though it is not practical to include interest in cost of production, excluding altogether may lead to wrong managerial decisions which may not be desirable. Therefore, the way forward would be excluding interest from regular cost sheet and cost calculations but for other purpose of decision making, notional interest should be included as part of cost where interest is material.

6. Write short notes on:

(4×2.5=10)

- a) Replacement price method
- b) Idle capacity
- c) Value analysis
- d) Period costs

**Answer**

a) Replacement Price Method

Replacement price method is defined as "the price at which it is possible to purchase an item, identical to that which is being replaced/revalued". It is also referred to as market price method. Under this method, materials issued are valued at the replacement cost of the items. This method pre-supposes that determination of the replacement cost of material at the time of each issue, i.e. the cost at which identical materials could be currently purchased. The product cost under this method is at current price, which is the main objective of the replacement price method. This method is based on view that cost should reflect current market conditions. When this method is used, profit is made during rising prices and loss is incurred during falling prices.

**b) Idle Capacity**

Idle capacity is that part of the capacity of a plant, machine or equipment which cannot be effectively utilized in production. In other words, it is the difference between the practical or normal capacity and capacity utilization based on expected sales. For example, if the practical capacity of production of a machine is 10,000 units in a month, but is used only to produce 8,000 units because of public demand of the product, then in such a case 2,000 will be treated as idle capacity of the machine. Generally, it is due to lack of demand, non-availability of raw material, shortage of skilled labor, absenteeism, shortage of power, fuel or supplies, seasonal nature of product etc.

**c) Value Analysis**

Value analysis or value engineering is a technique applied to analyze all aspects of an existing product or component to determine the minimum cost necessary for specific function requirements. This may result in various alterations being made to the product with object of reducing costs. Value analysis looks at the function that the product fulfills and inquiries into the possibility of performing the same function more cheaply, even though this may mean completely redesigning the product or developing an entirely different items. Value analysis a multi-disciplinary method of enhancing product value by improving the relationship of worth to cost through the study of function.

**d) Period costs**

The costs which are not associated with production are called period costs. They are treated as an expense of the period in which they are incurred. They may be fixed or variable. They are charged against the revenue of the relevant period. Differences between opinions exist whether certain costs should be considered as product or period costs. There is an opinion that variable manufacturing costs are product costs whereas fixed manufacturing and other costs are period costs as they are closely related to the passage of time than to manufacturing of product.