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SUGGESTED SOLUTION

INTERMEDIATE N'19 EXAM

SUBJECT- COSTING

Test Code - PIN 5070

BRANCH - () (Date :)

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ANSWER-1

ANSWER-A

(i) Re - order quantity = $\sqrt{\frac{2\,AO}{C \times i}}$

$= \sqrt{\frac{2 \times 7500 \times 12 \times 500}{60 \times 10}}$

= 3,873 units

(ii) Re-order level

= Maximum re-order period X Maximum usage

= 8 weeks X 750 units per week

= 6,000 units

(iii) Minimum stock level

= Re-order level – {Normal usage X Average reorder period}

= 6,000 – (500 X 6.5)

= 2,750 units

(iv) Maximum stock level

= Re-order level + Re-order quantity – (Minimum usage X Minimum re-order period)

= 6,000 + 3,873 – (5 X 250)

= 8,623 units

(v) Average stock level

= ½ (Minimum stock level + Maximum stock level)

= ½ (2,750 + 8,623)

= 5,687 units

(5*1 = 5 MARKS)

ANSWER-B

Capacity Ratio $= \frac{\text{Actual Hours}}{\text{Budgeted Hours}} \text{ x } 100$

75% $= \frac{\text{AH}}{\text{6,000 units x 4 hour per unit}}$

0.75 $= \frac{\text{AH}}{\text{24,000 hours}}$

AH = 18,000 Hours

Efficiency Ratio $= \frac{\text{Actual Output in terms of Standard Hours}}{\text{Actual Working Hours}} \times 100$

$= \frac{5{,}000 \text{ units} \times 4 \text{ hours per unit}}{18{,}000 \text{ hours}} \times 100$

$= \frac{20{,}000 \text{ Hours}}{18{,}000 \text{ Hours}} \times 100 = 111.11\%$

Activity Ratio $= \frac{\text{Actual Output in terms of Standard Hours}}{\text{Budgeted Output in terms of Standard Hours}} \times 100$

$= \frac{20{,}000 \text{ Units}}{6{,}000 \text{ Units} \times 4 \text{ hour per unit}} \times 100$

$= \frac{20{,}000 \text{ Units}}{24{,}000 \text{ Units}} \times 100$

= 83.33%

(5 MARKS)

ANSWER-C

Contract Account for the year ended 31st March, 20X8

		(Rs'000)		(Rs'000)
To Material issued to site		5,000	By Material at site	1,800
To Direct Wages	3,800		By Material returned	100
Add : Outstanding wages	110	3,910	By Work – in – progress :	
To Plant hire		700	- Value of work certified	10,000
To Site office cost		270	- Work uncertified	230
To Direct expenses		500		
To Depreciation (special plant)		300		
To National profit c/d		1,450		
		12,130		**12,130**

(5 MARKS)

ANSWER-D

Reconciliation Statement

Particulars	Rs.	Rs.
Loss as per Cost Accounts		(2,48,300)
Add : Works overheads over recovered	30,400	
Depreciation over charged in cost accounts	35,100	
Interest credited during the year in financial accounts	7,500	73,000
Less : Selling overheads under recovered	20,300	
Administrative overheads under recovered	27,700	
Bad debts w/off in financial accounts	15,000	
Preliminary Exp. w/off in financial accounts	5,000	(68,000)
Loss as per Financial Accounts		**(2,43,300)**

(5 MARKS)

ANSWER-2

ANSWER-A

(a) Cost sheet for the year ended 31st March, 2018.

Units produced – 14,000 units

Units sold – 14,153 units

Particulars	Amt. (Rs.)
Raw materials purchased	42,25,000
Add : Freight Inward	1,00,000
Add : Opening value of raw materials	2,28,000
Less : Closing value of raw materials	(3,05,000)
	42,48,000
Less : Sale of scrap of material	8,000
Materials consumed	42,40,000
Direct Wages (12,56,000 + 1,50,000)	14,06,000
Prime Cost	56,46,000
Factory overheads (20% of Rs. Prime Cost)	11,29,200
Add : Opening value of W. I . P	1,92,500
Less : Closing value of W. I. P	(1,40,700)
Factory Cost	68,27,000
Add : Administrative overheads	1,73,000

Cost of Production	70,00,000
Add : Value of opening finished stock	6,08,500
Less : Value of closing finished stock	6,08,500
[Rs. 500 (70,00,000/14,000) × 1,064)	
(1,217 + 14,000 – 14,153 = 1,064 units)	(5,32,000)
Cost of Goods sold	**70,76,500**
Distribution expenses (Rs. 16 × 14,153 units)	2,26,448
Cost of Sales	**73,02,948**
Profit (Balancing figure)	14,43,606
Sales (Rs. 618 × 14,153 units)	**87,46,554**

(10 MARKS)

ANSWER-B

Break- even point (in units) is 50% of sales i.e. 12,000 units.

Hence, Break- even point (in sales value) is 12,000 units × Rs. 200 = Rs. 24,00,000

(i) We know that Break even sales = $\frac{Fixed\ cost}{P/V ratio}$

or Rs. 24,00,000 = $\frac{Fixed\ cost}{25\%}$

or Fixed Cost = Rs. 24,00,000 × 25% = Rs. 6,00,000

So Fixed Cost for the year is Rs. 6,00,000

(ii) Contribution for the year= (24,000 units × Rs. 200) × 25%= Rs. 12,00,000

Profit for the year = Contribution – Fixed Cost

= Rs. 12,00,000 - Rs. 6,00,000 = Rs. 6,00,000

(iii) Target net profit is Rs. 11,00,000

Hence, Target contribution = Target Profit + Fixed Cost

= Rs.11,00,000 + Rs. 6,00,000 = Rs. 17,00,000

Contribution per unit = 25% of Rs. 200 = Rs. 50 per unit

No. of units = $\frac{Rs.17,00,000}{50\ per\ unit} = 34{,}000\ unit$

So, 34,000 units to be sold to earn a target net profit of Rs. 11,00,000 for a year.

(iv) Net desired total Sales (Number of unit x Selling price) be X , then desired profit is 25% on Cost or 20% on Sales i.e. 0.2X

Desired Sales = $\frac{Fixed\ cost + Desired\ profit}{P/V ratio}$

X= 6,00,000 + 0.2X / 25%

or, 0.25 X = 6,00,000 + 0.2 X

or, 0.05 X = 6,00,000 or,

X = Rs. 1,20,00,000

No. of units to be sold = 1,20,00,000/ 200 = 60,000 units

(v) If Break- even point is to be brought down by 4,000 units then Break-even point will be 12000 units – 4000 units = 8000 units

Fixed Cost = Rs. 6,00,000

Required Contribution per unit = 6,00,000/ 8,000 unit = Rs. 75

Selling Price = Contribution per unit/ P/Vratio = Rs. 75/25% =Rs. 300 per unit

Hence, selling price per unit shall be Rs. 300 if Breakeven point is to be brought down by 4,000 units.

(5*2 = 10 MARKS)

ANSWER-3

ANSWER-A

Operating Cost Sheet

Fixed Cost:	
Salaries 800 x 12	Rs. 9,600
Gate-keepers 10 x 200 x 12	24,000
Operators 2 x 400 x 12	9,600
Clerks 4 x 250 x 12	12,000
Administration Expenses	18,000
Depreciation:	
Premises Rs. 6,00,000 ÷15	40,000
Projector and Equipment 3,20,000 x 0.10	32,000
Total Fixed Cost	1,45,200
Variable Costs:	
Electricity and oil	11,655

Carbon	7,235
Misc. expenses	5,425
Advertisements	34,710
Hire of print	1,40,700
Total variable costs	1,99,725
Total cost	3,44,925
Add: 30% return on gross proceeds or 3/7 of cost	1,47,825
Gross Proceed	4,92,750
Total man-shows (refer to calculation below)	9,85,500
Cost per man-show	Re.0.50

Rate for each class:

Janata cost per man-show x weightage i.e., 0.50 x 1 = Re. 0.50

Sanman cost per man-show x weightage i.e., 0.50 x 2 = Re. 1.00

Lord's cost per man-show x weightage i.e., 0.50 x 3 = Rs. 1.50

Computation of man-shows :

No. of seats : Janata	= 250 seats
Sanman circle	= 250 seats
Lord's circle	= 125 seats
With weightage (i.e., express all seats in terms of Janata)	
Janata 250 x 1 =	250 seats
Sanman circle 250 x 2 =	500 seats
Lord's circle 125 x 3 =	375 seats
	1,125 seats
No. of shows: 3	
∴ Total weighted seats = 1,125 x 3 =	3,375 seats
Less : 20% vacant seats	675
	2,700
Man-shows per annum = 2,700 x 365 =	9,85,500

(8 MARKS)

Notes :

1. Management expects 30% return on gross proceeds

Gross Proceeds	100
Return 30%	30

Cost 70

It means relation to return to cost = 3/7

2. In this question, it is necessary to understand weightage concept. Whenever weightage is given, express the items having higher weightage in terms of item having lowest weightage so that all items can be expressed equally.

(2 MARKS)

ANSWER-B

Workings:

	Skilled	**Unskilled**
Standard Rate per hour	80	60
Standard time for producing one unit	1.5 hours (Rs.120 ÷ Rs.80)	1.5 hours (Rs.90 ÷ Rs.60)
Actual hours paid (AH_{Paid})	6,600 hours	5,400 hours
Standard hours required to produce 4,000 units (SH)	6,000 hours (1.5 hours× 4,000 units)	6,000 hours (1.5 hours× 4,000 units)
Actual hours worked (AH_{Worked})	$\frac{6,600}{100}$ x 97.5 = 6,435 hours	$\frac{5,400}{100}$ x 97.5 =5,265 hours
Revised Std. Hours (RSH)	$\left(\frac{6,600+5,400}{100} x97.5\right) x0.5$ =5,850 hours	$\left(\frac{6,600+5,400}{100} x97.5\right) x0.5$ = 5,850 hours
Idle $time_{Abnormal}$	6,600-6,435 = 165 hours	5,400 – 5,265 = 135 hours

(3 MARKS)

(i) Labour Rate Variance = AH_{Paid} (Std. Rate – Actual Rate)

- Skilled = 6,600 hours (Rs.80 – Rs.87.50) = Rs.49,500 (A)
- Unskilled = 5,400 hours (Rs.60 – Rs.55) = Rs.27,000 (F)

= Rs.22,500 (A)

(ii) Labour Efficiency Variance = Std. Rate (SH – AH_{Worked})

- Skilled = Rs.80 (6,000 hours – 6,435 hours) = Rs.34,800 (A)
- Unskilled = Rs.60 (6,000 hours – 5,265 hours) = Rs.44,100 (F)

= Rs.9,300 (F)

(iii) Labour Mix Variance = Std. Rate (RSH – AH_{Worked})

- Skilled = Rs.80 (5,850 hours – 6,435 hours) = Rs.46,800 (A)
- Unskilled = Rs.60 (5,850 hours – 5,265 hours) = Rs.35,100 (F)

= Rs.11,700 (A)

(iv) Labour Yield Variance = Std. Rate (SH – RSH)

- Skilled = Rs.80 (6,000 hours – 5,850 hours) = Rs.12,000 (F)
- Unskilled = Rs.60 (6,000 hours – 5,850 hours) = Rs.9,000 (F)

= Rs.21,000 (F)

(v) Labour Idle time Variance = Std. Rate × Idle time$_{Abnormal}$

- Skilled = Rs.80 × 165 hours = Rs.13,200 (A)
- Unskilled = Rs.60 × 135 hours = Rs.8,100 (A)

= Rs.21,300 (A)

(vi) Variable Overhead Expenditure Variance

= AH_{Worked} (SR - AR)

$$= 11{,}700 \text{ hours} \left(\frac{Rs.75}{2 \text{ x} 1.5 \text{ hours}} - \frac{\text{Rs.}2{,}85{,}000}{11{,}700 \text{ hours}} \right)$$

= 11,700 hours (Rs.25 – Rs.24.36) = Rs.7,488 (F)

(vii) Variable Overhead Efficiency Variance

= Std. Rate (SH – AH_{Worked})

= Rs.25 (12,000 – 11,700) = Rs.7,500 (F)

(7*1 = 7 MARKS)

ANSWER-4

ANSWER-A

(i) Statement showing total cost of each product assuming absorption of overheads on Machine Hour Rate Basis.

Particulars	A	B	C	D	Total
Output (units)	100	110	120	150	480
Direct material (Rs.)	30	40	35	45	150
Direct Labour (Rs.)	25	30	30	40	125
Direct labour- Machine hrs	5	4	3	4	
Overhead @ Rs. 30/- per Machine hr	150	120	90	120	480
Total cost per unit (Rs.)	205	190	155	205	755
Total cost (Rs.)	20,500	20,900	18,600	30,750	90,750

Overhead Rate = $\frac{Total\ overhead\ costs}{Total\ MHrs.} = \frac{Rs.57{,}000}{1{,}900} = Rs.30\ per\ unit$

Total Overheads	Rs.		
Factory works expenses	22,500	Factory exp per unit	22,500 / 1,900 = Rs. 11.84
Stores receiving cost	8,100	Stores receiving cost	8100 / 100 = Rs. 81
Machine set up costs	12,200	Machine set-up cost	12,200 / 48 = Rs. 254.1
Costs relating to quality control	4,600	Cost relating to QC	4,600/48 =Rs. 95.83
Expense relating to material handling & dispatch	9,600	Material handling & dispatch	9,600 / 96 = Rs. 100/-
Total	57,000/-		

(5 MARKS)

Statement showing total cost of each product assuming activity based costing

Particulars	A	B	C	D	Total
Output (Units)	100	110	120	150	480
No. of production runs	10	11	12	15	48
No. of stores requisition	25	25	25	25	100
No. of sales orders	20	22	24	30	96
Unit costs - Direct material (Rs.)	30.00	40.00	35.00	45.00	
Unit costs - Direct labour (Rs.)	25.00	30.00	30.00	40.00	
Unit costs - Factory works expenses (Rs.)	59.20	47.36	35.52	47.36	
Unit costs - Stores receiving cost (Rs.)	20.25	18.41	16.88	13.50	
Unit costs - Machine set-up cost (Rs.)	25.42	25.42	25.42	25.42	
Unit costs – QC (Rs.)	9.58	9.58	9.58	9.58	
Unit costs – Material Handling (Rs.)	20.00	20.00	20.00	20.00	
Unit cost (Rs.)	189.45	190.77	172.40	200.86	
Total cost (Rs.)	18,945	20,984.7	20,688.00	30,129	

Statement showing differences (in Rs.)

Particulars	A	B	C	D
Unit cost MHR	205	190	155	205
Unit cost ABC	189.45	190.77	172.40	200.86
Unit cost - difference	15.55	-0.77	-17.40	4.14
Total cost MHR	20,500	20,900	18,600	30,750
Total cost ABC	18,945	20,985	20,688	30,128

The difference is that A consumes comparatively more of Machine hours.

The use of activity based costing gives different product costs than what were arrived at by utilising traditional costing. It can be argued that Product costs using ABC are more precise as overheads have been identified with specific activities.

(5 MARKS)

ANSWER-B

Process A Period—February 1999

(FIFO Method)

Statement of Equivalent Production

Input		Output		Equivalent Production			
Particulars	Units	Particulars	Units	Material		Labour and Overhead	
				Units	%	Units	%
Opening stock	4,000	Units completed :					
Units		(a) Work on opening stock	4,000	—		3,000	75
introduced	16,000	(b) New units completed	10,000	10,000	100	10,000	100
		Closing stock	6,000	6,000	100	2,000	331/3
	20,000		**20,000**	**16,000**		**15,000**	

(3 MARKS)

Statement of Cost for each Element

Elements of Cost	Cost	Equivalent units	Cost per units
Material	Rs. 5,120	16,000	Re. 0.32
Labour	3,000	15,000	0.20
Overhead	3,000	15,000	0.20

Note : Only cost for the period will be considered in this statement.

(2 MARKS)

Statement of Apportionment of Cost

Items	Elements	Equivalent production	Cost per unit Re.	Cost Rs.	Total Rs.
Opening WIP	Material				
	Labour	3,000	0.20	600	—
	Overhead	3,000	0.20	600	1,200*
Units newly	Material	10,000	0.32	3,200	
introduced and	Labour	10,000	0.20	2,000	
completed	Overhead	10,000	0.20	2,000	7,200
Closing	Material	6,000	0.32	1,920	

inventory					
	Labour	2,000	0.20	400	
	Overhead	2,000	0.20	400	2,720

(2.5 MARKS)

*This is the cost incurred on opening work-in-process during the period.

Dr. **Process A Account** **Cr.**

Particulars	Units	Amount Rs.	Particulars	Units	Amount Rs.
To Opening Stock	4,000	1,600	By Finished Stock A/c	14,000	10,000*
To Unit introduced	16,000		By Closing Stock	6,000	2,720
Material		5,120			
Labour		3,000			
Overhead		3,000			
	20,000	**12,720**		**20,000**	**12,720**

* Process A has been credited by an amount of Rs 10,000.

The details for the same are given below:

(i) Cost already incurred on opening stock Rs. 1,600

(ii) Cost of work done for completing the opening stock 1,200

(Refer to statement of apportionment of cost)

(iii) Cost for completing newly introduced units 7,200

Cost of units completed and transferred to finished stock 10,000

(2.5 MARKS)

ANSWER-5

ANSWER-A

(i) Preparation of Production Budget (in nos.)

	October	November	December	January
Demand for the month (Nos.)	4,000	3,500	4,500	6,000
Add: 20% of next month's demand	700	900	1,200	1,300
	(950)	(700)	(900)	(1,200)
Less: Opening Stock	3,750	3,700	4,800	6,100
Vehicles to be produced				

(3 MARKS)

(ii) Preparation of Purchase budget for Part-X

	October	November	December
Production for the month (Nos.)	3,750	3,700	4,800
Add: 40% of next month's production	1,480 (40% of 3,700)	1,920 (40% of 4,800)	2,440 (40% of 6,100)
	5,230	5,620	7,240
No. of units required for production	20,920 (5,230 × 4 units)	22,480 (5,620 × 4 units)	28,960 (7,240 × 4 units)
Less: Opening Stock	(4,800)	(5,920) (1,480 × 4 units)	(7,680) (1,920 × 4 units)
No. of units to be purchased	16,120	16,560	21,280

(4 MARKS)

(iii) Budgeted Gross Profit for the Quarter October to December

	October	November	December	Total
Sales in nos.	4,000	3,500	4,500	12,000
Net Selling Price per unit*	Rs. 3,46,150	Rs.3,46,150	Rs.3,46,150	41,538
Sales Revenue (Rs. in lakh)	13,846	12,115.25	15,576.75	34,284
Less: Cost of Sales (Rs. in lakh) (Sales unit × Cost per unit)	11,428	9,999.50	12,856.50	
Gross Profit (Rs. in lakh)	2,418	2,115.75	2,720.25	7,254

* Net Selling price unit = Rs. 3,95,600 – 12.5% commission on Rs. 3,95,600 = Rs. 3,46,150

(3 MARKS)

ANSWER-B

(i) Statement of profitability of the Oil Mill (After carrying out further processing) for the quarter ending 31st March 20X8.

Products	Sales Value after further processing	Share of Joint Cost	Additional processing cost	Total Cost after processing	Profit (loss)
ACH	1,72,500	98,667	43,000	1,41,667	30,833
BCH	15,000	19,733	9,000	28,733	(13,733)
CSH	6,000	4,933	--	4,933	1,067
DSH	45,000	24,667	1,500	26,167	18,833
	2,38,500	1,48,000	53,500	2,01,500	37,000

(2.5 MARKS)

(ii) Statement of profitability at the split off point

Product	Selling price of split off	Output in units	Sales value at split off point	Share of joint cost	Profit at split off point
ACH	15.00	8,000	1,20,000	98,667	21,333
BCH	6.00	4,000	24,000	19,733	4,267
CSH	3.00	2,000	6,000	4,933	1,067
DSH	7.50	4,000	30,000	24,667	5,333
			1,80,000	1,48,000	32,000

Note : Share of Joint Cost has been arrived at by considering the sales value at split off point.

(2.5 MARKS)

ANSWER-C

Determination of quotation price for the job

Cost	(Rs.)
Direct Materal (10 Kg × Rs.10)	100
Direct Labour (20 hrs. × Rs. 5)	100
Variable production overhead (20 hrs. × Rs. 2)	40
Fixed Overhead $\left(\frac{Rs.1,00,000}{10,000\ budgeted\ hours} \times 20\ hours\right)$	200
Other costs	50
Total Costs	**490**

Net Profit is 30% of sales, therefore total costs represent 70% (Rs. 490 × 100) ÷ 70 = Rs. 700 price to quote for job.

To check answer is correct; profit achieved will be Rs. 210 (Rs. 700 – Rs. 490) = Rs. 210 ÷ Rs. 700 = 30%.

(5 MARKS)

ANSWER-6

ANSWER-A

The essential features, which a good cost and management accounting system should possess, are as follows : **(ANY FIVE)**

(i) **Informative and simple :** Cost and management accounting system should be tailor – made, practical, simple and capable of meeting the requirements of a business concern. The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.

(ii) **Accurate and authentic :** The data to be used by the cost and management accounting system should be accurate and authenticated; otherwise it may distort the output of the system and a wrong decision may be taken.

(iii) **Uniformity and consistency :** There should be uniformity and consistency in classification, treatment and reporting of cost data and related information. This is required for benchmarking and comparability of the results of the system for both horizontal and vertical analysis.

(iv) **Integrated and inclusive :** The cost and management accounting system should be integrated with other systems like financial accounting, taxation, statistics and operational research etc. to have a complete overview and clarity in results.

(v) **Flexible and adaptive :** The cost and management accounting system should be flexible enough to make necessary amendments and modification in the system to incorporate changes in technological, reporting, regulatory and other requirements.

(vi) **Trust on the system :** Management should have trust on the system and its output. For this, an active role of management is required for the development of such a system that reflect a strong conviction in using information for decision making.

(5*1 = 5 MARKS)

ANSWER-B

Zero based budgeting is superior to traditional budgeting : Zero based budgeting is superior to traditional budgeting in the following manner :

- It provides a systematic approach for evaluation of different activities.
- It ensures that the function undertaken are critical for the achievement of the objectives.
- It provides on opportunity for management to allocate resources to various activities after a thorough – cost benefit analysis.
- It helps in the identification of wasteful expenditure and then their elimination. If facilitates the close linkage of departmental budgets with corporate objectives.
- It helps in the introduction of a system of Management by Objectives

(5 MARKS)

ANSWER-C

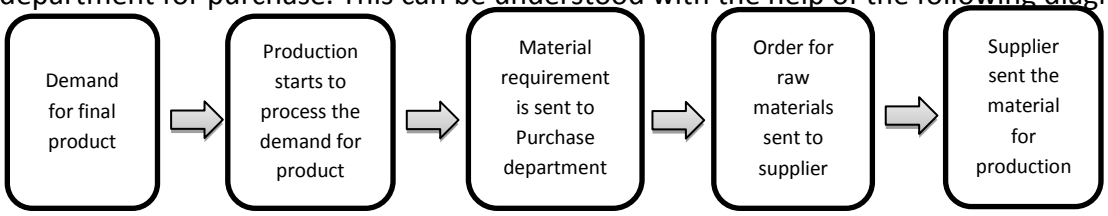
Just in Time (JIT) Inventory Management

JIT is a system of inventory management with an approach to have a zero inventories in stores. According to this approach material should only be purchased when it is actually required for production.

JIT is based on two principles

(i) Produce goods only when it is required and
(ii) the products should be delivered to customers at the time only when they want.

It is also known as 'Demand pull' or 'Pull through' system of production. In this system, production process actually starts after the order for the products is received. Based on the demand, production process starts and the requirement for raw materials is sent to the purchase department for purchase. This can be understood with the help of the following diagram :



(5 MARKS)

ANSWER-D

Job costing : In this method of costing, cost of each job is ascertained separately. It is suitable in all cases where work is undertaken on receiving a customer's order like a printing press, motor work shop, etc. This method of costing is used for non – standard and non – repetitive products produced as per customer specifications and against specific orders. Jobs are different from each other and independent of each other. Each Job is unique.

Batch Costing : It is the extension of Job costing. Homogeneous products are produced in a continuous production flow in lots. A batch may represent a number of small orders passed through the factory in batch. Each batch here is treated as a unit of cost and thus separately costed. Here cost per unit is determined by dividing the cost of the batch by number of units produced in the batch.

(5 MARKS)