

Solved Scanner Appendix

CA Final Gr. II
(Solution of November - 2014)

Paper - 5: Advanced Management Accounting

Chapter - 1 : Developments in the Business Environment
2014 - Nov [6] (a) Statement of Cost Pool

Overhead	₹	Basis	No. of Activities	Cost per unit
Production	26,76,000	No. of Set up	4080	670.50
Stores	10,81,500	No. of Receipt	3920	275.89
Inspection	27,36,000	Inspection	2560	149.41

Statement of Cost for the Product P and Q

	P (₹)	Q (₹)
Cost:		
Material	12,000	8,000
Labour	(960 × 6) = 5,760	(100 × 6) = 600
Overhead:		
Production	(670.5 × 36) = 24,138	(670.5 × 24) = 16,092
Stores	(275.89 × 48) = 13,242.72	(275.89 × 52) = 14,346.28
Inspection	(149.41 × 30) = 4,482.3	(149.41 × 10) = 1,494.1
	59,623.02	40,532.38

Total

∴ Overhead = ₹ 42,00,000
Labour hours = 80,000
Per hour rate = ₹ 52.50 (i.e. 42,00,000/80,000)

(iii) Statement of cost and selling price per quarter

	(ABC)
	Qty 3,000
Material (Given)	₹ 12,000
Direct labour hour (300 × 6)	₹ 1,800

Avoidable Overhead $\left[\frac{60,000}{24,000} \times 3,000 \right]$	7,500
Overhead:	
Store (275.89 × 20)	5,517.8
Production (670.5 × 6)	4,023
Quantity inspection (149.41 × 24)	3,585.84
Total Cost	Round of 34,427
+ Profit (25%)	8,607
Sale Value	43,034
Selling Price per unit	₹ 14.345

Working Notes:

	Machine Maintenance	Set-up	Quantity Inspection
Salary of Technical Staff (₹ 12,75,000)	30% 3,82,500	40% 5,10,000	30% 3,82,500

Technical staff salary:

Machine Maintenance and Operation	3,82,500
Machine Operation Expenses	20,25,000
Machine Maintenance Expenses (Given)	3,75,000
Total	27,82,500

It can be distributed into store Q Production in the ratio of 1:4.

i.e. Store ₹ 5,56,500
Production ₹ 22,26,000

2014 - Nov [7] (c), (d)

(c) Just in Time: A JIT approach is a collection of ideas and philosophy that streamline a company's production process activities to such an extent that waste of all kinds, viz material and labour is systematically driven out of the process. Just in time technique enables a company to ensure that it receives products/spare parts materials from its suppliers on the exact value & date and the exact time when they are needed.

So on an organization perspectives JIT beneficial the most in terms of cost, time and inventory. So JIT beneficial to an organisation in the following way :

- Reduction in inventory cost :** Unnecessary filling up of raw material, WIP and finished goods are avoided. The focus is on production and purchase as per the organisation's requirements.

2. **Reduction in wastage of time** : Wastage of time in various ways like inspection time, machinery set up time, storage time, queue time, defectives rework time etc.
 3. **Reduction in scrap rates** : There will be sharp reductions in the rates of defectives or scrapped units. The workers themselves identify defects and take prompt action to avoid their recurrence.
 4. **Reduction in overhead costs** : By reducing unnecessary activities and the associated time and cost - drivers, overheads can be greatly reduced e.g. material handling rework cost, facility costs etc.
- Thus, in these ways JIT is beneficial to an organization.

(d) Phases in the life cycle : A project consist of sequential phases . These phases are extremely useful in planning a project since they provide a framework for budgeting, manpower and resource allocation and for scheduling project milestones and project reviews, the method of division of a project into phases may differ somewhat from industry to industry and product to product.

There are four phases of product life cycle :

- Initialisation
 - Growth
 - Production
 - Decline
- **Initialisation** : Management establishes goals and estimates of resources needed.
 - **Growth** : Project plan and schedule for operational phase defined.
 - **Production** : The major work of the project accomplished.
 - **Decline** : Project terminated.

Chapter - 2 : Cost Concepts, CVP Analysis and Decision Making

2014 - Nov [3] (b)

	X	Y	Z
Direct Material @ 20	400	240	600
Direct Labour@ 20	<u>60</u>	<u>100</u>	<u>80</u>
Cost	<u>460</u>	<u>340</u>	<u>680</u>
Sale	500	400	800
Contribution	40	60	120
Rank	3	2	1
Hours	3	5	4
Contribution Per hour	13.33	12	30
Rank	2	3	1

Material: 50,000

$$Z - 750 \times 30 = 22,500$$

$$Y - 1,500 \times 12 = 18,000$$

$$X - 475 \times 20 = \underline{9,500}$$

50,000

If Material is a limiting factor, then 475 units of X, 1500 units of Y and 750 units of Z to be produced.

$$\text{Labour hours} = 9,200$$

$$Z - 750 \times 4 = \underline{3,000}$$

6,200

$$X - 1,500 \times 3 = \underline{4,500}$$

1,700

$$Y - 340 \times 5 = \underline{1,700}$$

Nil

If hours is a limiting factor, then 1500 units of X, 340 units of Y and 750 units of Z have to be produced.

2014 - Nov [7] (b) Relevancy of costs: Relevant cost are those costs which are affected by a decision. Relevance means pertinent to the decision in hand the expected future cost which are relevant cost.

- **Example of Relevant Cost :**
 - Material Cost
 - Labour Cost
 - Variable Overhead Cost
- **Example of Non - Relevant Cost :**
 - Past or historical cost (sunk cost)
 - Purchases price of material cost
 - Fixed Cost
 - Book value of equipment.

Chapter - 3 : Pricing Decisions

2014 - Nov [1] {C} (a), (d)

- (a) 6,000 pairs at 60% capacity
further increase 20% capacity
so produce 6,000 + 2,000 = 8,000 pairs

Cost per pair is as under:

	₹
Direct Material [35 +6%]	-37.1
Direct Labour [12.5 + 8%]	-13.5
Works OH - (Variable)	31.5
Fixed [31.50 + 10%]	34.38

Administrative OH - Variable	1.5
Fixed [4.5 +10%]	<u>4.95</u>
	122.93
	<u>+ 25.00</u>
	<u>147.93</u>

But no increase in selling price ..

So....

@ 122.93 × 8,000 Units	=	9,83,440
Target profit		<u>1,67,300</u>
∴ Selling Price		11,50,740/8,000

∴ Selling Price = 143.84.

(d) Calculation of selling price:

1. Selling price to yield 20% return on investment:

Investment	3,00,000
ROI 20%	60,000

Tax 30%

= PAT 100 - 30 = 70%

Pretax Profit $\frac{60,000}{70} \times 100 = 85,714$

Sales = Cost + Return
 $3,00,000 + 85,714$
 $= 3,85,714/40,000$
 $= 9.64$ per unit.

2. Selling price to yield 6% profit on list price

list price be	100
profit 6%	6
Pretax profit	
$(1 - 0.3) = 0.7$	
∴ $6/0.7$	8.57
List price	100
Discount	<u>40</u>
Net Price	60
Profit Desired	<u>8.57</u>
Cost	51.43

51.43	3,00,000	Sale
100	?	5,83,317
No. of units	40,000	
Selling price	14.58	
Discount	<u>5.83</u>	
Net Price	<u>8.75</u>	

Chapter - 4 : Budget and Budgetary Control**2014 - Nov [6] (b)****Assumption**

- (i) It is assumed that material is consumed during the year is same as production unit, it mean there is a wastage of material 5.26% which is same as at 2013.
- (ii) Material price is increased over the actual price at 25%
- (iii) Labour rate is increased by 0.20 @ 90%
- (iv) It is assumed that fixed overhead is increased by 10% over budgeted period.

Production Cost Budget For the year 2014

Particulars	Budget		Actual	
	39,900 unit		50,000 unit	
	Units	₹	Units	₹
Material Consumed	42,000	42,000	52,630	65,788
Wages at 1 hour per unit at ₹ 1 per unit Budget	-	39,900	-	71,111 (Increase by 0.20 ₹) at 90%
Variable Overhead at ₹ 1 per unit Budget		19,950		25,370
Fixed Overhead		30,000		33,000
Total		1,31,850		1,95,269

Chapter - 5 : Standard Costing**2014 - Nov [5] (a)**

Let SQ for product B = Q units

* **Material usage variance for B**

$$= (SQ \times SP) - (AQ \times AP)$$

$$600A = (SQ \times 30) - (70 \times 30)$$

$$600A = 30SQ - 2100$$

$$30SQ = 2100 - 600$$

$$SQ = \frac{1500}{30}$$

$$SQ = 50 \text{ units}$$

So; std mix is 1:1

Let AQ of material A be K units. Total AQ = (K+70) units. Since std. mix is 1:1 RAQ of A and B are each

$$\left(\frac{K+70}{2} \right) \text{ and } \left(\frac{K+70}{2} \right) \text{ respectively.}$$

It is given that material mix variance = (SQ × SP) - (RAQ × SP)

$$90A = \left[\frac{(K+70)}{2} \times 24 + \frac{(K+70)}{2} \times 30 \right] - [(K \times 124) + (70 \times 30)]$$

$$90A = (12K + 840 + 15K + 1050) - (24K + 2100)$$

$$90A = (27K + 1890 - 24K - 2100)$$

$$120 = 3K$$

$$K = 40$$

Total AQ = 40 + 70 = 110 units

RAQ for A and B is 55 units each.

Variance computation chart

Particulars	(1) SQ × SP	(2) RAQ × SP	(3) AQ × SP	(4) AQ × AP
A	50×24 = 1200	55×24 = 1320	40×24 = 960	40×30 = 1200
B	50×30 = 1500	55×30 = 1650	70×30 = 2100	70×40 = 2800
	2700	2970	3060	4000

Material wise Break-up of variances

	Particulars	Prod. A	Prod. B	Total
(A)	Yield variance [(1)-(2)]	120 A	150 A	270 A
(B)	Mix variance [(2)-(3)]	360F	450 A	90 A
(C)	Usage variance [(1)-(3)]	240 F	600 A	360 A
(D)	Price variance [(3)-(4)]	240 A	700A	940 A
(E)	Total material cost			
	Variance [(1)- (4)]	-	1300 A	1300 A

Chapter - 6 : Costing of Service Sector

2014 - Nov [7] (e) Customer Costing in Service Sector

Meaning : Different customers or groups of customers differ in their profitability. Hence, using ABC, profitability can be analysed customer group wise, since ABC creates costs pools for activities. Different groups of customers have different 'activity profits'. Hence analysis of relative profitability based on customer category is called "Customer Profitability Analysis".

Cost Classification : For customer costing purpose, costs are divided into :

1. **Customer Specific Costs** : These are the direct and indirect cost of providing service to a specific customer plus customer related cost assigned to each customer e.g. cost of express courier service to a client/customer who requests overnight delivery of some document.

2. **Customer line category costs:** These are costs, which are broker into broad categories of customers and not to an individual customer e.g. cost of free gift given to customers who purchase for more than ₹ 5,000
3. **Company Costs :** These are costs that are not allocated to either customer line or to individual customers but charged to the firm e.g. cost of advertisement to promote sale of service.

Illustrative areas of Customer Profitability Analysis :

(1) Services by Banks:

- (i) Withdrawal of cash
- (ii) Request for an Account Statement
- (iii) Stopping a cheque etc.

Different customers use different quantities of these services, customer profitability profiles can be built up and customers can be charged according to the costs incurred to serve them.

(2) Services by Hotels :

- (i) **Gardens & Lounges** - appreciated and used by older guests.
- (ii) **Swimming pools** - used by families.
- (iii) **Bars** - used by business guests

Facilities offered and the category of customers who use them can be related or linked. Such analysis will show the relative profitability and lead to strategies for encouraging more profitable guests.

Chapter - 7 : Transfer Pricing

2014 - Nov [4] (a)

Calculating Profit of each division:

Note: It is assumed that X must satisfy the demand from Y, so,. Y must buy the component from X so, X can not sell more than 15000 component to external market so, X can fulfill the demand of external market up to 15000 component only so, profit at this level is .

Particular	Division - X		Division - Y
	External Demand	Transfer	External Sale
Unit/Components	15000	10000	10000
Nature	Sale	Transfer	Sale
Selling price	300	600	1200
Variable Cost			
- Own	157	314	375
- Transfer	-	-	600
Contribution	143	286	225

Total Contribution	(21,45,000 + 28,60,000)	22,50,000
- F.C.	20,62,000	13,50,000
Profit	29,43,000	9,00,000

Total Profit = 29,43,000 + 9,00,000 = ₹ 38,43,000

(ii) Calculating Financial impact on Y Division

∴ Profit of Division X at maximum level.

Particulars	Div. X	Div. Y	Total
Components/unit	35,000	10,000	
Selling price	300	1200	
Less: Variable Cost			
own.	157	375	
Purchase cost	-	510	
Contribution	143	315	
Total Contribution	50,05,000	31,50,000	81,55,000
F.C.	(20,62,000)	(13,50,000)	(34,12,000)
Profit	29,43,000	18,00,000	47,43,000

⇒ Financial impact if Div. Y Purchase the component from the market than it increase the profit of that Division by ₹ 9,00,000.

So, it is advisable to purchase the unit/component by Division Y from the market and Division X work at their maximum capacity to increase the profit of the Division.

Chapter - 9 : Cost Sheet, Profitability Analysis and Reporting

2014 - Nov [1] {C} (b) The three non-financial perspectives with Objective and Measures are as under:

1. **Customer perspective:** It requires customers themselves to identify a set of goals and measures on factors which really matter to them. Performance measures such as time, cost, quality, performance and service should be developed by groups of managers working with customers to understand their primary requirements.

Objective	Measures
• New products	→ % of sales from new products → % of sales from proprietary products
• Responsive supply	→ share of key accounts, purchase.
• Preferred supplier	→ Ranking by key accounts
• Customer partnership	→ No. of co-operative engineering efforts.

- 2. Internal Perspective:** The organisation must excel at certain internal processes, decisions and actions if it is to meet these customer requirements. The internal perspective must reflect the organisation's core skills and the critical technology involved in adding value to the customer's business.

Objective

Measures

- Technological capability → Manufacturing geometry VS Competition
- Manufacturing excellence → Cycle time & unit cost & yield.
- Design productivity → Engg. efficiency
- New productivity introduction → Actual introduction schedule VS Plan.

- 3. Innovation & Learning:** The Innovation & learning perspective is required in order to recognize that this is constantly seek to learn, to innovate and to improve every aspect of the organisation and its business just to maintain their competitive situation, let alone to improve in the future.

Objective

Measures

- Technology leadership → time to develop next generation
- Manufacturing learning → process time to maturity
- Product Focus → % of products that equal 80% of sales.
- Time to market → New product introduction VS Competition.

2014 - Nov [5] (b)

Impact on profit of continuance of production By renewing the lease

Particulars	(₹ Lacs) Factories			Total
	A	B	C	
Sales (A)	600	2400	1200	4200
Less: Costs				
Raw materials	150	700	290	1140
Direct labour	150	560	280	990
Factory overhead variable	40	220	110	370
Selling and Dist. variable	46	140	80	266
Total variable cost (B)	386	1620	760	2766
Contribution (A-B) = C	214	780	440	1434
Fixed cost:				
Factory overhead	80	240	120	440
Selling overhead	30	100	60	190
Admin. overhead	40	180	80	300
Head office Exp.	24	100	60	184
Other	24	-	-	24
Total fixed cost (D)	198	620	320	1138
Profit = (C-D)	16	160	120	296

(ii) Comparative statement of profitability

	When Prod. of factory A is transferred to Factory B			When Prod. of Factory A is transferred to Factory C		
	B	C	Total	B	C	Total
Sales	3000	1200	4200	2400	1800	4200
- V.C.	2065	760	2825	1620	1196	2816
Contribution	935	440	1375	780	604	1384
- F.C.	720	320	1040	620	1100	1020
Profit	215	120	335	160	204	364

The above statement shows that as a result of renewal of lease of Factory A. The total profit gets reduced from ₹ 320 Lacs to ₹ 296 lacs. However Factory A still contributing towards meeting the head office expenses. Hence it may not be advisable to discontinue the lease.

The above statement shows that transfer of production of factory A to Factory C yields higher profit i.e. ₹ 364 lacs. Hence this source may be adopted.

Working Notes:

(A) Fixed and variable costs when prod. of Factory A is transferred to Factory B.

	(₹ lacs)		
	Sales	V.C.	F.C.
B	2,400	1,620	620
A	600	405	-
Additional costs			
(₹ 80,000×₹ 50)		40	100
Total	3,000	2,065	720

$$\text{sales units} = \frac{6,00,00,000}{750} = 80,000 \text{ units.}$$

(B) Fixed and variable costs when the production of Factory A is transferred to Factory C

	(₹ lacs)		
	Sales	V.C.	F.C.
C	1200	760	320
A	600	380	-
Additional costs			
(₹ 80,000×₹ 70)	-	56	80
Total	1800	1196	400

Chapter - 10 : Linear Programming**2014 - Nov [3] (a)** X_2 - no. of programme on T.V. X_1 - no. of programme on Radio

Constraints:

$$X_1 \geq 3 \quad (0,3)$$

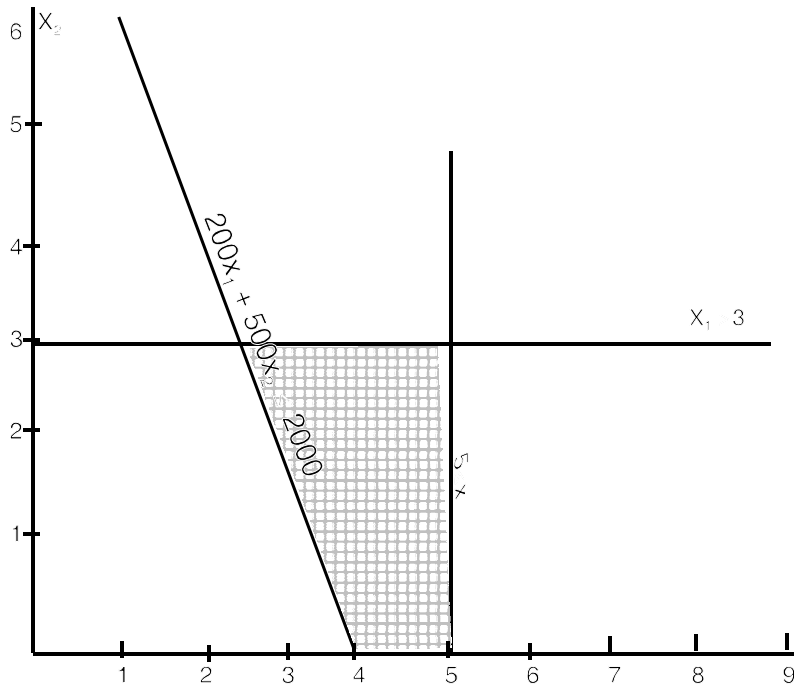
$$X_2 \leq 5 \quad (5,0)$$

$$200 X_1 + 500 X_2 \leq 2000$$

$$\text{if } \left. \begin{array}{l} x_1 = 0 \quad x_2 = 4 \\ x_2 = 0 \quad x_1 = 10 \end{array} \right\} (4,10)$$

Audience - A $\geq 50,000$ incomeAudience - B $\leq 50,000$ income

Survey	A	B
TV	7,50,000	1,50,000
Radio	40,000	2,60,000

Graphic Method

The advertising firm should give 4 Programmes on TV and no programme on Radio in order to achieve a Maximum reach of 36,00,000 customers.

Chapter - 11 : Transportation Problem

2014 - Nov [7] (a) In a transportation problem for cost minimisation, there are 4 rows indicating quantities demanded and there totals upto 1800 units and 4 columns giving quantities supplied and these totals upto 2100 units then the condition for the solution is to add one more row i.e. 5th row giving demand of 300 units. It makes problem, a balanced problem and it can be solved by VAM method further.

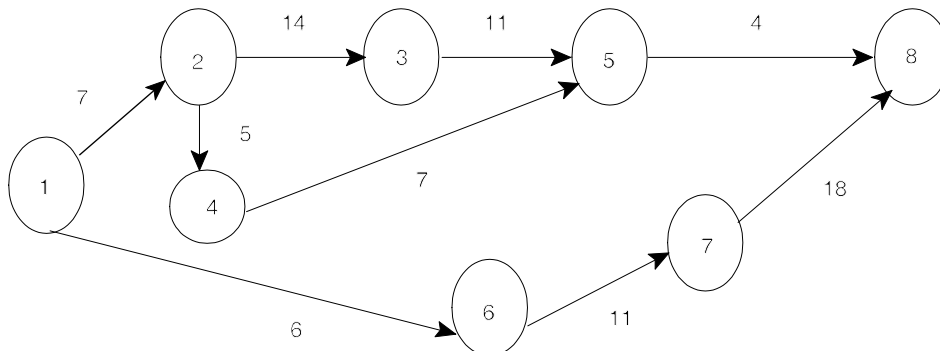
Chapter - 13 : Critical Path Analysis

2014 - Nov [1] {C} (c) There are three types of errors in logical sequencing that may arise while drawing a network diagram:

1. An event cannot occur until all the incoming activities into it have been completed.
2. An activity cannot start unless all the preceding activities on which it depends, have been completed.
3. A dummy activity does not consume either any resource or time.

2014 - Nov [4] (b)

(i) **Network diagram:**



$$\frac{t_o + t_p + 4t_m}{6} \left(\frac{t_p - t_o}{6} \right)^2$$

(ii)

Job	d	variance
1-2	7	4
2-3	14	16
3-5	11	4
7-8	18	-
5-8	4	1
6-7	11	-
4-5	7	-
1-6	6	-
2-4	5	-
Variance =		25
SD = $\sqrt{25}$ =		5
Critical Path		Duration
1-2-3-5-8		7+14+11+4 = 36
1-2-4-5-8		7+5+7+4 = 23
1-6-7-8		6+11+18 = 35

(iii) If most likely time of activity 3-5 get revised to 14 then the duration of that becomes 13. So overall duration of critical path change and the new duration of critical path becomes 38 instead of 36 but critical path does not change so any change is occur in critical path by changing most likely time of activity 3-5.

Chapter - 15 : Simulation

2014 - Nov [2] (b)

Statement of Random Number- Fresh Cake

Daily Sale	Probability	Cum. Probability	Range
100	0.1	0.1	0-0
101	0.3	0.4	1-3
102	0.4	0.8	4-7
103	0.7	0.15	8-14
104	0.9	0.24	15-23
105	0.11	0.35	24-34
106	0.15	0.50	35-49
107	0.21	0.71	50-70
108	0.18	0.89	71-88
109	0.09	0.98	89-97
110	0.02	1.00	98-99

Statement of Random Number - Old Cake:

Daily Sale		Probability	Cum. Probability	Range
0		0.70	0.70	0-69
1		0.20	0.90	70-89
2		0.08	0.98	90-97
3		0.02	1	98-99
⇒ Sale	7			
Buy	4.5			
Profit	2.5			
Unsold Cake		2		
Buy	4.5			
Loss	(2.5)			

No	OP. Stock	FC RN	Demand	Order	Loss	OC RN	Old Cake	Cl. Stock	Demand x2.5 = Total Profit
1	0	37	106	105	1	17	0	0	265
2	0	73	108	110	-	28	0	2	270
3	2	14	103	100	1	69	0	0	257.5
4	0	17	104	110	-	38	0	6	260
5	6	24	105	100	-	50	0	1	262.5
6	1	35	106	105	-	57	0	-	265
7	0	29	105	110	-	82	1	6	262.5
8	6	37	106	100	-	44	0	0	265
9	0	33	105	110	-	89	1	6	262.5
10	6	68	108	100	2	60	0	-	270
					4			21	2640
+ Total Profit					→	2640			
- Loss any					→	(10)	(2.5x4)		
- Old Stock Loss					→	(52.5)	(2.5x21)		
					=	2577.5			

Chapter - 16 : Learning Curve Theory**2014 - Nov [2] (a)****Calculation of total variable cost if u units to be produced:**

Direct Material	20,000
Direct Labour	10,240 (16,000 x 80% x 80%)
Variable overhead	4,000
	<u>34,240</u>

• Q Ltd.	Offer -	34,400
	Cost	<u>34,240</u>
	Profit	160

• P Ltd.		
1.	Offer :	33,000
	- Cost	<u>34,240</u>
	Loss	(1,240)
2.	Supply Idle labour force:	
	Offer -	28,000

Calculation of Cost:

Direct Labour → $16,000/8 = 2,000$ hrs.
Apply 80% learning curve

$$\therefore 2,000 \times 80\% \times 80\% \\ 1,280 \times 2 = 2,560$$

Cost →	Direct Material	20,000
	Direct Labour	2,560
	Variable overhead	<u>4,000</u>
		26,560

	Offer -	28,000
	(-) Cost -	<u>26,560</u>
	Profit →	1,440

Thus, XY Ltd. have to choose P Ltd. offer. In which they use the idle labour force of P Ltd. @ 2 per labour hour and produce 4 units in which they get ₹ 1,440 profit. So it is beneficial for XY Ltd.

Shuchita Prakashan (P) Ltd.

25/19, L.I.C. Colony, Tagore Town,
Allahabad - 211002

Visit us: www.shuchita.com

