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SUGGESTED ANSWERS

EML

PAPER – 5: ADVANCED MANAGEMENT ACCOUNTING

Question 1: Total cost

Particulars	Computation	Result
I. Material cost		
(1) Iron	10 kg * Rs. 5	50.00
(2) Copper	5 kg * Rs. 8	40.00
		90.00
II. Wages		
(1) Plant X	3 hr * Rs. 15	45.00
(2) Plant Y	5 hr * Rs. 12	60.00
		105.00
III. Variable overhead		
(1) X	3 hr * Rs. 8	24.00
(2) Y	5 hr * Rs. 5	25.00
		49.00
IV. Selling cost	Given	20.00
		20.00



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V. Total variable cost (I) + (II) + (III) + (IV)

264

VI. Fixed cost

(1) X	3 hr * Rs. 8	24.00
2) Y	5 hr * Rs. 5	25.00
		49.00

Total variable cost (V) + (VI) 264 + 49

313

Note :

If labour hrs in plant X is 3hrs , then variable overhead and fixed overhead will also be taken as 3hrs.

Conclusion:

- (a) Minimum selling price if product is new = If product is new, minimum selling price should be at least variable cost which is 264.
- (b) Minimum selling price if product is established = Minimum selling price should cover variable cost and fixed cost =313.

Question 2:

WN1: Basic Data

- a. Wood required for handle=2.5 Board foot
- b. Price per foot=Rs. 50/foot
- c. Wood required for head=0.40 high quality board foot
- d. Cost per board foot=Rs. 60/foot
- e. Scrap (%)= 20% of completed heads
- f. 4% of scrap can be sold for Rs. 0/spoilt head
- g. No. of men-6Men
- h. Hrs/day-8 Hrs
- i. Days/Month-25 day
- j. 12 mallet can be produced in 40 minutes time

- k. Idle time-[15+8+9]= 32 minutes
- l. 10% of each day also booked as Idle time
- m. Maximum capacity-20,000 mallet per month
- n. Lot size- 250 units
- o. Margin-33% on SP

WN2: Analysis of hidden information

I. Cost of handle and head

- a. Cost of handle=2.5 board feet*60=125.00
- b. Cost of head=0.40 foot*60*1.20=28.80
- c. Total cost=153.80.00

II. Analysis of Scrap

- Scrap=20% of completed head
- 1.20 heads: 1 head completed
- 0.20 head-Scrap



III. Scrap Value

- 0.20:
- :4%-Rs. 10-0.008 heads=Rs. 0.08
- : 96%- 0-0.192 heads=

For every one completed head, we get 0.20 head as scrap out of which we can sell 0.008 heads at \square 0.08

IV. Man hours

- = 6men*8hrs*25days
- =1200 Man Hours

V. Effective working hour/day after removing idle time

- =480 minutes-32 minutes-48 minutes
- = 400 minutes



VI. Total mallets that can be produced by 6 workers in 25 days

Mallet which can be produced in a day

$$= \frac{400 \text{ minutes}}{40 \text{ minutes}} * 12 \text{ mallet} = 120 \text{ mallet/person/day}$$

Mallet which can be produced in 25 days

$$= 6 \text{ men} * 120 \text{ mallet/day} * 25 \text{ days} \\ = 18000 \text{ Mallets}$$

VII. Under production

Maximum production is 20,000 units, but Actual Production is only 18000 units, hence there is an under production of 2000 units

VIII. No. of Lots

$$= \frac{18000 \text{ units}}{250 \text{ units/lot}} = 72 \text{ lots}$$

IX. Variable cost

It is assumed that Finishing & Painting and power is variable cost and rest are all assumed to be fixed

a. Finishing and Painting =20,000

b. Power =400

c. Total Cost for 20,000 units 20400

d. Cost for 18000 units: 18360

$$\frac{C * 18000}{20,000}$$

X. Fixed Cost

a. Lubricating =600

b. Depreciation =1400

c. Repair =200

d. Plant manager salary =9400

e. Other OH =60,000
71600

WN 3: Desired selling price

$$SP = \text{Cost} + \text{Profit}$$

Step 1: SP

Let us assume that SP is x

Step 2: Profit

$$\text{Profit} = 0.33x$$

Step 3: Cost

p.u

18000 units

a. Material Cost

i. Head

28.80

ii. Handle

125.00

iii. Scrap

(0.08)

153.72

2766960

b. Labour

$$[1200\text{hr} * \text{Rs. } 6]$$

18000 units

0.40

c. Variable Cost

18360

Particulars	harvesting	oil	Market
(a) Variable cost	5000 (2.5 × 2000)	10000 (10 × 1000)	1875 (3.75 × 500)
(b) Fixed cost	10000 (5 × 2000)	7500 (7.5 × 1000)	4375 (8.75 × 500)
(c) units	2000 kg	1000 kg	500 cans
(d) Total cost (a + b)	15000	17500	6250

d. Fixed

71600

2864120

Step 4: Selling Price

$$X = 159.11 + 0.33x$$

$$0.67x = 159.11 = 237.47$$



3) Hamara Apna Bank

Given: Deposits

Loan

credit cards

Working note 1 : Basic data

a) No. of deposit a/c 58600

b) No. of loan a/c 13000

c) No. of cash credit a/c 14000

Working note 2 : Analysis of hidden information

Estimated cost

Particulars	Current cost	Computation	Results
I. ATM service			
a) Machine maintenance	4,00,000	-	4,00,000
b) Rent	2,00,000	-	2,00,000
c) Currency	1,00,000	(1,00,000*2)	2,00,000
Sub Total	7,00,000		8,00,000

II. Computer processing

$$2,50,000 + (2,50,000 * 3) = 10,00,000$$

III. Issuing Statements

$$18,00,000 + 2,00,000 = 20,00,000$$

IV. Computer inquires

$$2,00,000 + 80\% = 3,60,000$$

Cost driver

ATM transaction $1,50,000 + 50,000 = 2,00,000$

Computer processing transactions $1,50,000 + 2,00,000 + 3,00,000 = 20,00,000$



No. of statements	$3,50,000 + 50,000 + 1,00,000 = 5,00,000$
Telephone minutes	$3,60,000 + 1,80,000 + 1,80,000 = 7,20,000$

ABCD

Particulars	Cost pool	Cost Drive	ABC Rate
ATM	8,00,000	2,00,000	Rs. 0.4/ATM
Computer processing	10,00,000	20,00,000	Rs. 0.50/Comp processing
Issuing statements	20,00,000	5,00,000	Rs. 4/ issuing statements
Computer enquires	3,60,000	7,20,000	Rs. 0.5/ Computer enquires

Working note 3 : Appointment of cost

Particulars	Deposits	Loan	Cash credit	
ATM	$(1,50,000 * 4)$	-	$(50,000 * 4)$	8,00,000
	6,00,000		2,00,000	
Computer processing	$(1,50,000 * 0.3)$	2,00,000	$(3,00,000 * 0.3)$	10,00,000
	7,50,000	1,00,000	1,50,000	
Issuing statements	$(3,50,000 * 4)$	$(50,000 * 4)$	$(1,00,000 * 4)$	20,00,000
	14,00,000	2,00,000	4,00,000	
Computer enquires	$(3,60,000 * 0.5)$	$(1,80,000 * 0.5)$	$(1,80,000 * 0.5)$	3,60,000
	1,80,000	90,000	90,000	
Total	29,30,000	3,90,000	8,40,000	

Working note 4: Cost per account

Particulars	Deposits	Loan	Cash credit
a. Apportioned cost(W.N. 3)	29,30,000	3,90,000	8,40,000
b. No. of a/c's	58,600	13,000	14,000
c. Cost/account	Rs. 50	Rs. 30	Rs. 60



Question 4:

(i)	Projected Raw Material Issues (Kg)			
		'A'	'B'	'C'
	'X' (48,000 units-Refer Note)	60,000	24,000	---
	'Y' (36,000 units-Refer Note)	<u>72,000</u>	<u>---</u>	<u>54,000</u>
	Projected Raw Material Issues	1,32,000	24,000	54,000

- Based on this experience and the projected sales, the BIML has budgeted production of 48,000 units of 'X' and 36,000 units of 'Y' in the sixth period.

$$= 52,500 \times 40\% + 45,000 - 18,000$$

$$= 48,000$$

$$= 27,000 \times 40\% + 42,000 - 16,800$$

$$= 36,000$$

- Production is assumed to be uniform for both products within each four-week period.

(ii)/ (iii)

Projected Inventory Activity and Ending Balance (Kg)

Particulars	'A'	'B'	'C'
Average Daily Usage	6,600	1,200	2,700
Beginning Inventory	96,000	54,000	84,000
Orders Received:			
Ordered in 5 th Period	90,000	-	60,000
Ordered in 6 th Period	90,000	-	-
Sub Total	276,000	54,000	144,000
Issues	132,000	24,000	54,000
Projected Ending Inventory Balance	144,000	30,000	90,000

Note

- Ordered 90,000 Kg of 'A' on fourth working day.
- Order for 90,000 Kg of 'A' ordered during fifth period received on tenth working day.
- Order for 90,000 Kg of 'A' ordered on fourth working day of sixth period received on fourteenth working day.
- Ordered 30,000 Kg of 'B' on eighth working day.
- Order for 60,000 Kg of 'C' ordered during fifth period received on fourth working day.
- No orders for 'C' would be placed during the sixth period.

(iv) Projected Payments for Raw Material Purchases

Raw Material	Day/Period Ordered	Day/Period Received	Quantity Ordered	Amount Due	Day/Period Due
'A'	20 th /5 th	10 th /6 th	90,000 Kg	90,000	20 th /6 th



'C'	4th/5th	4th /6th	60,000 Kg	60,000	14th/6th
'A'	4th/6th	14th /6th	90,000 Kg	90,000	4th/7th
'B'	8th/6th	13th /7th	30,000 Kg	60,000	3rd /8th



Question 5

Basic data :

Overall profit :

Particulars	Harvesting	Oil mill	Marketing	Total
(a) Sale value	25000 (2000 × 12.5)	62500 (1000 × 62.5)	75000 (500 × 150)	75000
(b) Cost	15000	17500	6250	38750
(c) Transfer price	-	25000	62500	
(d) profit	10000	20000	6250	36250

Transfer price under shared contribution :

Particulars	Harvesting	Oil mill	Marketing	Total
(a) Sale value	22,222	66,666	75000	75000
(b) Cost	5000	10,000	1875	16,875
(c) Transfer price	0	22,222	66,666	
(d) Contribution (5000 : 10000 : 1875)	17,222	34,444	6459	58,125
(e) Fixed cost	10,000	7500	4375	
(f) Profit	7222	26944	2084	

Particulars	Harvesting	Oil mill	Marketing	Total
(a) Profit under market price method	10,000	20,000	6250	
(b) Profit under shared contribution	7222	26944	2084	
(c) Manager preference	Market price	Shared contribution	Market price method	



Question 6

WN1-Relevant cost

Particulars	Reasons	
Amount		
Original cost estimate	Historical cost, not relevant for decision making	0
Cost incurred so far	Historical cost, not relevant for decision making	0
Cost to be incurred	Out of pocket cost, hence relevant for decision making	29700
Progress payment received	Historical income not relevant for decision making	0
Material	Since it can alternative use worth 2250, opp-cost is relevant	2250
Dept A	Since it is working normally, relevant cost is variable cost is variable cost(15man days X 120)	1800
Wage in dept B	Since to busy relevant cost is variable cost plus Contribution foregone (Rs. 100 X 25) + (2500 X 3.20)	10500
Variable overhead	Marginal cost, hence relevant for decision making [25% of (2500 + 1800)]	1075
Delivery cost	Out of pocket ,hence relevant for decision making	
1350		
Fixed overhead	Absorbed relevant overhead is not relevant for decision making	0
Supervisory overtime	Out of pocket ,hence relevant for decision making	
1050		
Control device	Since control device can be used elsewhere,10500 is opportunity inflow but one day labour and overhead will be consuming (10500 - 120 - 30 (25% Of 120))	
10350		



If conversation is not carried out:

Inflow = 12000

Outflow = 240 (120 X 2) – wages

Outflow = 60(25%)- overhead

Scrap inflow = 11400

Drawing inflow = 1500

Inflow 24200

Conversion has carried out

Outflow = 24200

Opportunity cost If commission did not carried out ,we would save 12000 and spend 240 on labour and 60 on variable overhead we would also get 11400 on scrap and 1500 on drawings. Hence net inflow would be 24200.but some conversation took place, this inflow would become outflow

61575

Question 7:

1. Computation of RAQ (Lakh Rolls)

	Total AQ Sold = Given = 8.40 Lakh Rolls	
Type	Industrial	Domestic
Ratio	2	6
RAQ	2.10 Lakh Rolls	6.30 Lakh Rolls

2. Computation of Budgeted Average Contribution p.u.

Particulars	Industrial	Domestic	Total
(a) Budgeted Contribution Margin (Lakhs)	100	240	340
(b) Budgeted Sale Quantity (Lakh Rolls)	2	6	8
(c) Budgeted Average Contribution p.u. (c ÷ a)	50	40	42.50

3. Computation of Sales Variances (Impact on Contribution)

Note: Quantities in Lakh Rolls, Margins in p.u, Result Computation in Lakhs.

Particulars	Col. (1): BQ × BM	Col. (2): RAQ × BM	Col. (3): AQ × BM	Col. (4): AQ × AM
Industrial	2 × 50 = 100	2.10 × 50 = 105	2.52 × 50 = 126.00	Given = 119.70
Domestic	6 × 40 = 240	6.30 × 40 = 252	5.88 × 40 = 235.20	Given = 246.96
Total	340	357	361.20	366.66

	Sales Margin Quantity Variance	+	Sales Margin Mix Variance	+	Sales Margin Price Variance
Industrial	= 100 – 105 = <u>5 F</u>		= 105 – 126 = <u>21 F</u>		= 126 – 119.70 = <u>6.3 A</u>
Domestic	= 240 – 252 = <u>12 F</u>		= 252 – 235.2 = <u>16.8 A</u>		= 235.2 – 246.96 = <u>11.76 F</u>
Total	= 340 – 357 = <u>17 F</u>		= 357 – 361.2 = <u>4.2 F</u>		= 361.2 – 366.66 = <u>5.46 F</u>

Note: Sales Margin Price Variance is not required to be computed in the given Qn. It is given for information value only.

4. Computation of Market Size and Market Share Variances

WN.1: Budgeted Market Share = $\frac{8 \text{ Lakh}}{80 \text{ Lakhs}} = 10\%$

WN.2: Actual Market Share = $\frac{8.40 \text{ Lakh}}{70 \text{ Lakhs}} = 12\%$

(a) **Market Size Variance** = Budgeted Market Share % × (Budgeted Industry Sale Quantity less Actual Industry Sale Quantity) × Budgeted Average Contribution p.u.

= 10% × (80 – 70) Lakh Rolls × 42.50

= 42.5 Lakhs Adverse

(b) **Market Share Variance** = Actual Industry Sale Quantity × (Budgeted Market Share % less Actual Market Share %) × Budgeted Average Contribution p.u.

= 70 Lakh Rolls × (10% – 12%) × 42.50

= 59.5

Lakhs Favourable Note: Market Size + Market Share Variance = 42.5 A + 59.5 F = Net 17 F, to match with Sales

Margin Quantity Variance.

Question 8

Sales variance

Part – 1 : Variance table

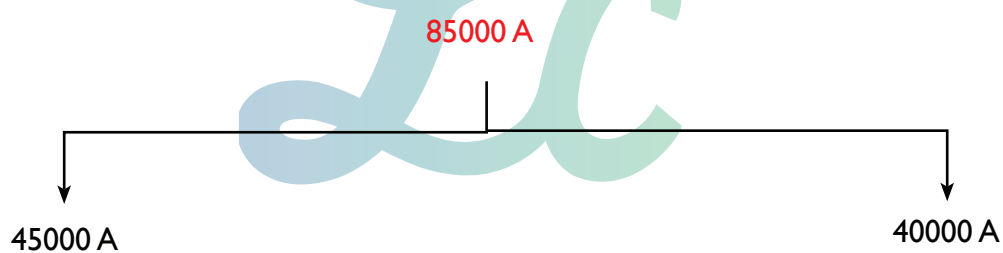
(1) BQ x BP	(2) AQ x AP	(3) AQ X BP
20,000 X 65	18000 X 67.5	18000 X 65
13,00,000	12,15,000	1170,000

Part – 2 : Sales price variance

$$(3) - (2) = 45000 \text{ F}$$

$$(3) - 1215000 = (45000)$$

$$\text{Therefore } (3) = 11,70,000$$



Material variance

Part – 1 : Variance table

(1) SQ x SP	(2) AQ x AP	(3) AQ X SP
54,000 Kg X 3	63 , 000 X 3.25	18000 X 65
162,000	2,04,750	189,000

Part – 2 : Price variance

$$(3) - (2) = 15750 \text{ F}$$

$$(3) - 204750 = (15750)$$

$$\text{Therefore } (3) = 1,89,000$$

Part – 3: Usage variance

$$(1) - (3) = (27000)$$

$$(1) - 189000 = (27000)$$

$SQ = \text{Actual output} \times \text{standard consumption per unit}$

Therefore, $54,000 = 18000 \text{ units} \times \text{standard consumption}$

Therefore, $\text{standard consumption} = 54000 / 18000 = 3 \text{ kg}$

Labour variance:

Part – 1 : Variance table

(1) SH x SR	(2) AH x AR	(3) AH X SR
$36,000 \times 3$	34200×6.20	34200×6.20
216,000	2,77,020	273600

Part – 2 : Rate variance

$$(3) - (2) = 6840 \text{ A}$$

$$(3) - 212040 = 6840$$

$$\text{Therefore } (3) = 205200$$

Part – 3: Efficiency variance

$$(1) - (3) = (14,400)$$

$$(1) - 273600 = +14,400$$

$$\text{Therefore } (1) = 288000$$



$$36000\text{hr} = 18000\text{unit} \times \text{std. hrs /unit (1)} - (3) = 10800 \text{ F}$$

Therefore std.hrs S=36000/18000 = 2 hrs/unit

Part – 1 : Variance table

(1) SH x SR	(2) AH x AR	(3) AH X SR
36,000 x 3	34200 x 6.20	34200 x 6.20
216,000	2,77,020	273600

Part – 2 : Rate variance

$$(3) - (2) = 6840 \text{ A}$$

$$(3) - 212040 = 6840$$

Therefore (3) = 205200

Part – 3: Efficiency

$$(1) - (3) = (14,400)$$

$$(1) - 273600 = +14,400$$

Therefore (1) - 288000



Fixed overhead variance:

Part – 1 : Variance table

(1) AOx SRU	(2) AFOH	(3) BFOH	(4)AH X SRH
18,000 x 15	18,000 x 18.05	20,000 x 15	34,200 x 7.50
2,70,000	3,25,000	300,000	2,56,500

Part – 2 : Expense variance

$$(3) - (2) = (25000)$$

$$(3) - 325000 = (25000)$$

Therefore (3) = 3,00,000

SRU = Rs. 15/ unit



Time / unit = 2 hr / unit

Therefore SRH = Rs. 7.5 / hr

Original Budget

Particulars	Computation	Per unit	Total for 20,000 units
(a) Material	3kg X Rs. 3	9.00	180,000
(b) Labour	2hr X Rs. 6	12.00	240,000
(c) Variable overhead	2hr X Rs. 8	16.00	320,000
(d) Total variable cost	Rs. 7.5 X 2hr	37.00	740,000
(e) Fixed cost		15.00	300,000
(f) Total cost		52.00	10,40,000
(g) Profit		13.00	260,000
(h) Selling price		65.00	13,00,000

Fixed overhead variance: Recondition of budgeted profit with actual using absorption costing :

(1) Budgeted profit = 260,000

(2) Variance

(a) Material = (42750) [162000 – 204750]

(b) Labour = 3960 [216000 – 212040]

(c) variable overhead = (10980)

(d) Fixed overhead = (55000)

(e) Sales price variable = + 45000

(f) Sales volume variance X N P ratio = (26000) (130,000 X 13/65)

1,96,190



Question 9

Basic data :

- (a) Spare part cost = Rs. 2000 for every 100 parts
- (b) Contribution per unit = (500 - 150 - 100 - 50) = 2000 Rs. / unit

Breakeven point :

(1) Initial breakeven point

$$200 X - 200,000 - (2000/100 \times X) = 0$$

$$200 X - 200,000 - 20 X = 0$$

$$180 X = 200,000$$

$$\text{Therefore } X = 200,000/180 = 1111.11 \text{ units}$$

Test :

- (1) Contribution for 1111.11 units
[1111.11 units X Rs. 200] = 222,222
- (2) Fixed cost = 200,000
- (3) Spare part cost (12 X 2000) = 24000
- (d) Loss = 1778

Second breaking point :

- (a) Loss to be covered = 1778
- (b) Contribution = Rs. 200
- (c) Hence additional units to break even = 9 units
- (d) Revised Breaking point (1111 +9) = 1120 units

Test:

- (1) Contribution from 1120 units
(1120 X 200) = 224000
- (2) Fixed cost = 200,000
- (3) Spare part = 24000

0



Question 10:

Basic data :

- (a) Profit mark up = 25%
- (b) Learning curve = 80%

Quotation of first 100 units :

(a) Direct material (500 X 100)	= 50,000
(b) Direct labour – Dept A [20hr X 100 X Rs. 10]	= 20,000
(c) Direct labour - Dept B [40hr X 100 X Rs. 15]	= 60,000
(d) Variable overhead [20% of 20,000 + 60,000]	= 16000
(e) Fixed overhead -Dept A [20hr X 100 X Rs. 8]	= 16000
(f) Fixed overhead -Dept B [40hr X 100 X Rs. 5]	= 20,000
(g) Total	= 182,000
(h) Cost / unit (g/100)	= Rs. 1820
(i) Add 25%	= 455
(j) Sale value	= 2275

Selling price for the next units :

Step 1: Total cost for 160 units

(a) Material (160 X 500)	= 80,000
(b) Wages Dept - A (160 X 20hr X Rs. 10)	= 32,000
(c) Wages Dept - B (160 X 40hr X 86.1 % X Rs. 15)	= 82656
(d) Variable overhead (32000 + 82656) X 20%	= 22931
(e) Fixed overhead- Dept A (160 X 20 hr X 8)	= 25600
(f) Fixed overhead- Dept B (160 X 40 X 86.1 % X Rs. 5)	= 25600
(g) Total cost	= 270,739



Step 2 : Total cost for 100 units = 18200

Step 3 : Incremental cost for 60 units = 88739

Step 4 : Cost /unit (88739 /60) = Rs. 1478

Step 5 : Add profit @ 25% = 370

Step 6: Selling price for second order = Rs. 1848

Step 1: Selling price for final 40 units:

(a) Material cost [500 × 200]	= 100,000
(b) Labour Dept A [20hr × 200units × Rs. 10]	= 40,000
(c) Labour Dept B [40hr × 200units × 80% × Rs. 15]	= 96000
(d) Variable overhead (20 % of (136000))	=27200
(e) Fixed overhead Dept A [20hr × 200 units × Rs. 8]	= 32000
(f) Fixed overhead Dept AB[40hr × 200 units × 80 % × 5]	= 32000
(g) Total	= 327200

Step 2 : cost for 160 units = 270,739

Step 3: Additional cost = 56,461

Step 4: Cost / unit = 1412

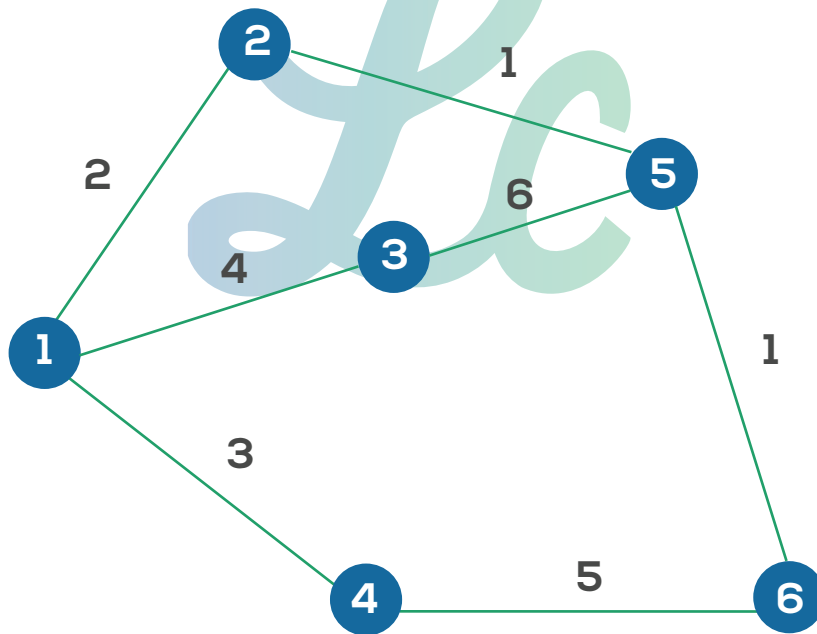
Step 5: selling price = Rs. 1764

Question 11:

Expected duration and variance :



Activity	t0	tm	tp	Expected duration	Variance
1-2	1	1	7	2	1
1-3	1	4	7	4	1
1-4	2	2	8	3	1
2-5	1	1	1	1	0
3-5	2	5	14	6	4
4-6	2	5	8	5	1
5-6	2	6	15	7	4



Critical path :

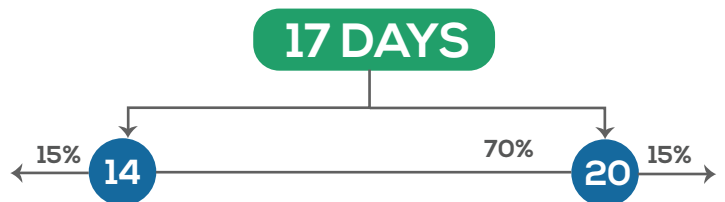
$$1 - 2 - 5 - 6 = 10$$

$$1 - 3 - 5 - 6 = 17$$

$$1 - 4 - 6 = 8$$

Expected project length :

The project is expected to complete in 17 days



Variance and SD :

Activity	variance
1-3	1
3-5	4
4-6	4
	9

Therefore ,SD = $\sqrt{9} = 3$

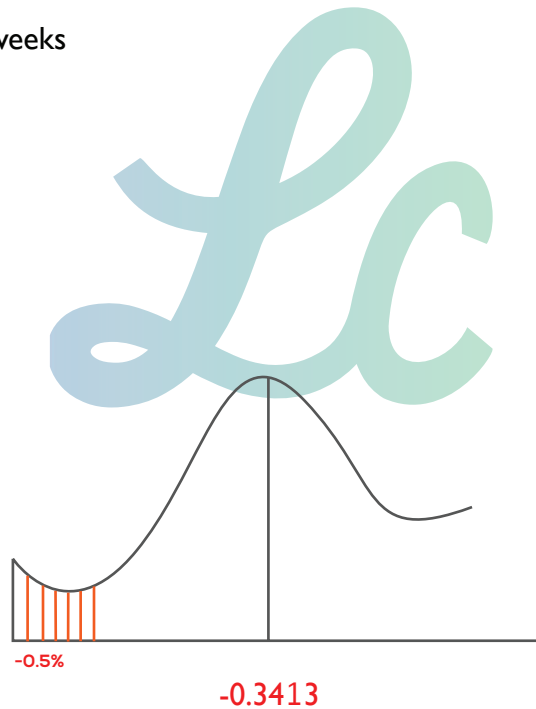
Probability project will be completed 3 weeks earlier than expected :

Probability of completing < 14 weeks

$$(1) Z = \frac{14-17}{3} = -1$$

$$-1 = -0.3413$$

(2) Probability



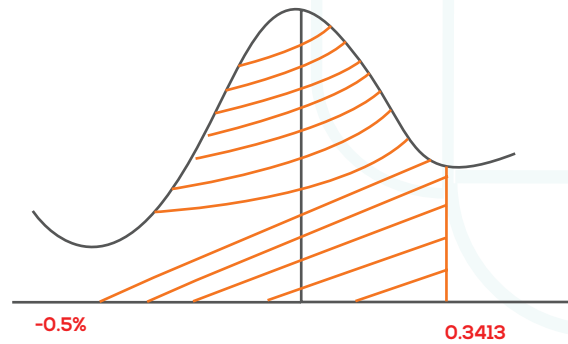
Probability no more than 3 weeks later than expected :

< 20 weeks

$$(1) Z = \frac{20-17}{3} = +1$$

$$+1 = 0.3413$$

(2) Probability



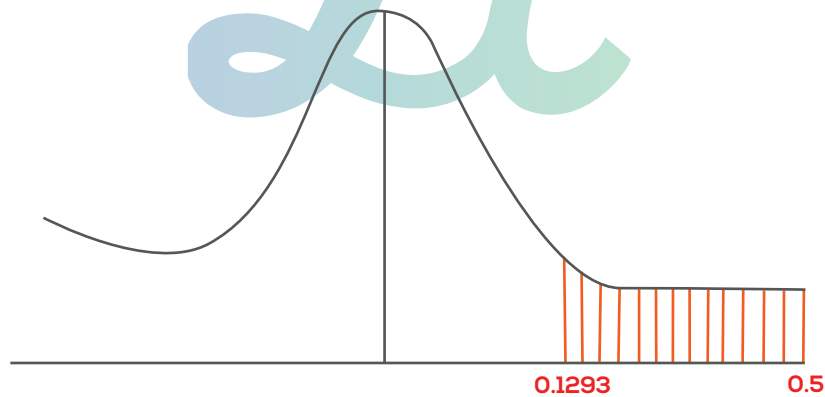
Therefore, probability = 84.17 %

Probability > 18 weeks :

$$(1) Z = \frac{18 - 173}{3} = +0.33$$

$$0.33 = 0.1293$$

(2) Probability > 18 weeks



Therefore, probability = 37.07 %

Duration which has 90% chance of being met :

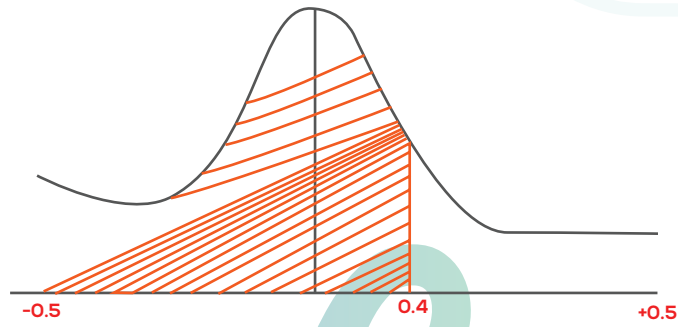
$$(1) Z = \frac{x - 173}{3} = 1.33$$

$$0.33 = 0.40$$

$$\text{Therefore, } x = [1.33 \times 3] + 17$$

$$= 20.99 \text{ weeks}$$

(2) Probability



Therefore, probability = 90 %

