7. WORKING CAPITAL MANAGEMENT

SOLUTIONS TO ASSIGNMENT PROBLEMS

Problem No - 1

Sales (units) = $\frac{2,60,000}{10}$ = 26,000 units

Inventory Norms	Credit Norms
RMHP – 3 weeks	DECP – 8 weeks
WIPHP – 3 weeks	CPP – 5 weeks
FGHP – 2 weeks	

Cost Structure - for ₹ 10.

Particulars	Amount ₹
DM	3
DL	4
OH	2
Total Cost	9
(+) Profit	1
Selling Price	10

Statement Showing Calculation of Working Capital

Particulars	Amount ₹	Amount ₹
A. Current Assets		
Stock of RM (WN-1)	4,500	
Stock of WIP (WN-2)	9,000	
Stock of FG (WN-3)	9,000	
Debtors (WN-5)	36,000	
Cash Balance (WN-6)	-	
Gross Working Capital		58,500
B. Current Liabilities		
Creditors for RM (WN-4)	7,500	
Current Liabilities		7,500
C. Net Working Capital (A – B)		**51,000**

Working Notes:

1. Stock of RM = $\frac{\text{Annual production (units)} \times \text{RM Cost} \times \text{RM}}{10}$

$$= 360d / 52w / 12m \quad = \frac{26,000 \times 3}{52} \times 3 = 4,500/-$$

2. Stock of WIP:

a) $RM = \frac{RM\,Consumption\,during\,the\,year}{52\,w} \times WIPHP \times DOC$

$$= \frac{26,000 \times 3}{52} \times 100\% \times 3 = 4,500/-$$

b) $Wages = \frac{Wages\,incurred\,during\,the\,year}{52\,w} \times WIPHP \times DOC$

$$= \frac{26,000 \times 4}{52} \times 3 \times 50\% = 3,000/-$$

c) $Overheads = \frac{Overheads\,incurred\,during\,the\,year}{52\,w} \times 3 \times 50\% = 1500/-$

Stock of WIP – 4500 + 3000 + 1500 = 9000/-

3. $Stock\ of\ FG = \frac{Annual\,producton\,(uts) \times COP / nt}{52\,w} \times DOC.FGH$

$$= \frac{26,000 \times 9}{52} \times 2$$

$$= 9,000/-$$

4. Creditors for RM:

$$= \frac{RM\,Purchases\,during\,the\,year}{52w} \times CPP$$

$$= \frac{26,000 \times 3}{52} \times 5 = 7,500/-$$

5. Investment in Debtors:

$$= \frac{Cost\,of\,sales\,during\,the\,year}{52w} \times DCP$$

$$= \frac{26,000 \times 9}{52} \times 8 = 36,000/-$$

Alternatively, Debtors can also be calculated on total sales value basis. In such a case investment in Debtors will increases to the extent of 4000/- $\left[\frac{26,000 \times (10 - 9)}{52} \times 8\right]$

6. In the absence of information cash balance has to be ignored.

Assumptions:

a) Level of activity will remain unchanged.

b) Cost structure will remain unchanged.

c) Various components of operating cycle will remain unchanged

d) Assume 1 year = 52 weeks

e) 100% Sales in on credit basis.

f) 100% purchases is on credit basis

g) While valuing WIP raw material is assumed to be completed to the extent of 100% whereas wages & overheads are assumed to be incurred to the extent of 50%.

Problem No - 2

Given Information,
Level of Activity = 54,000 units

Inventory Norms	Credit Norms
RMHP – 1 month	DECP – 1 month
WIPHP – 1/2 month	COP – 1 month
FGHP – 1 month	

Avg. time for wages = 10 days
Avg. time for OH = 30 days.

	Total Cost Basis	Cash Cost Basis
RM	50	50
DL	20	20
OH	40	30 [40-10]
Total Cost	110	100
(+) Profit	20	20
Selling Price	130	120

Statement Showing Calculation of Working Capital [Total Cost approach]

Particulars	Amount ₹	Amount ₹
A. Current Assets		
Stock of RM (WN-1)	2,25,000	
Stock of WIP (WN-2)	1,80,000	
Stock of FG (WN-3)	4,95,000	
Debtors (WN-4)	3,71,250	
Cash Balance (WN-5)	1,00,000	
Gross Working Capital		13,71,250
B. Current Liabilities		
Creditors for RM (WN-6)	2,25,000	
Creditors for Wages (WN-6)	30,000	
Creditors for OH (WN-6)	1,80,000	
Current Liabilities		**4,35,000**
Net working Capital (A-B)		**9,36,250**

Working Notes:

1. Stock of RM $= \frac{\text{Annual production X RM Cost X RM Cost / nt}}{12\text{m}}$ X RMHP

$= \frac{54{,}000 \text{ X } 50}{12}$ X1 = 2,25,000/-

2. Stock of WIP:

a) RM = $\frac{\text{RM Consumption during the year}}{12\text{m}}$ X WIPHP X DOC

$= \frac{54{,}000 \text{ X } 50}{12} \text{X} \frac{1}{2} \text{X} 100\%$ = 1,12,500/-

b) Wages = $\frac{\text{Wages incurred during the year}}{12\text{m}}$ X WIPHP X DOC

$= \frac{54{,}000 \text{ X } 20}{12} \text{X} \frac{1}{2}$ X 50% =22,500/-

c) Overheads = $\frac{\text{Overheads incurred during the year}}{52\text{w}}$ X 3 X 50% = 1500/-

$= \frac{54{,}000 \text{ X } 40}{12} \text{X} \frac{1}{2}$ X 50% = 45,000/-

Total Stock of WIP = 1,80,000.

3. Stock of FG = $\frac{\text{Annual producton (uts) X COP / nt}}{12\text{m}}$ X FGHP

$= \frac{54{,}000 \text{ X } 110}{12}$ X1

= 4,95,000/-

4. Inventory in Debtors:

$= \frac{\text{Annual production X Cost / nt}}{12\text{m}}$ X DCP

$= 75\% \text{ X } \frac{54{,}000 \text{ X } 110}{12}$ X1 = 3,71,250/-

5. Cash Balance = 1,00,000/-

6. Creditors:

RM $= \frac{\text{RM Consumption during the Year}}{12\text{m}}$ X CPP

$= \frac{54{,}000 \text{ X } 50}{12}$ X1 = 2,25,000/-

$$\text{Wages} = \frac{\text{Wages incurred during the year}}{12m} \text{ X Avg. time lag payment for cr.}$$

$$= \frac{54,000 \text{ X } 20}{360d} \text{X} 10 = 30,000/-$$

$$\text{Overheads} = \frac{\text{Overheads incurred during the year}}{360d} \text{ X Avg. time lag for payment to DH.}$$

$$= \frac{54,000 \text{ X } 40}{360} \text{X} 30 = 4,80,000$$

Assumptions:

a) Level of activity will remain unchanged.

b) Cost structure will remain unchanged.

c) Various components of operating cycle will be constant.

d) Assume 1 year = 360 days

e) 100% purchases are on credit basis

f) While valuing WIP raw material is assumed to be completed to the extent of 100% whereas wages & overheads are expected to be incurred to the extent of 50%.

Statement Showing Calculation of Working Capital [Cash Cost App]

Particulars	Amount ₹	Amount ₹
A. Current Assets		
Stock of RM	2,25,000	
Stock of WIP	1,68,750	
Stock of FG	3,37,500	
Debtors	4,50,000	
Cash	1,00,000	
Gross Working Capital		12,81,250
B. Current Liabilities		
Creditors for RM	2,25,000	
Creditors for DL	30,000	
Creditors for OH	1,35,000	
Current Liabilities		**3,90,000**
Net working Capital		**8,91,250**

Working Notes:

1. Stock of RM $= \frac{\text{Annual production X RM Cost X RM Cost / nt}}{12m} \text{ X RMHP}$

$$= \frac{54,000 \text{ X } 50}{12} \text{X} 1 = 2,25,000/-$$

2. Stock of WIP:

a) RM = $\frac{\text{RM Consumption during the year}}{12\text{m}}$ X WIPHP X DOC

= $\frac{54,000 \text{ X } 50}{12} \text{X} \frac{1}{2} \text{X} 100\%$ = 1,12,500/-

b) Wages = $\frac{\text{Wages incurred during the year}}{12\text{m}}$ X WIPHP X DOC

= $\frac{54,000 \text{ X } 20}{12} \text{X } \frac{1}{2} \text{ X } 50\%$ =22,500/-

c) Overheads = $\frac{\text{Overheads incurred during the year}}{52\text{w}}$ X 3

= $\frac{54,000 \text{ X } 30}{12} \text{X } \frac{1}{2} \text{ X } 50\%$ = 33,750/-

Total Stock of WIP = 1,68,750.

3. Stock of FG = $\frac{\text{Annual producton (uts) X COP / nt}}{12\text{m}}$ X FGHP

= $\frac{54,000 \text{ X } 100}{12} \text{X} 1$

= 4,50,000/-

4. Inventory in Debtors:

= $\frac{\text{Annual production X Cost / nt}}{12\text{m}}$ X DCP

= 75% X $\frac{54,000 \text{ X } 100}{12}$ X1 = 3,37,500/-

5. Creditors same as above.

Creditors for OH = $\frac{54,000 \text{ X } 30}{360}$ X 30 = 1,35,000

Problem No - 3

	Amount in ₹
A – Current Assets	
1. Raw Material inventory – (1 month) – 12,00,000 Uts X 60 X $\frac{1}{12}$	60,00,000

2. – Work in Progress – Production cycle 1 month Raw material (added in the beginning) ₹ 60,00,000 Wages $\left(12,00,000 \times 10 \times \frac{1}{12}\right) \times 50\% =$ 5,00,000 Overheads $\left[20 \times 12,00,000 \times \frac{1}{12}\right] \times 50\% =$ 10,00,000 **Total:**	75,00,000
3. Finished goods (inventory held for 2 months) Total Cost: Material 60.00 Lab our 10.00 Overheads 20.00 = $\left[90 \times 12,00,000 \times \frac{2}{12}\right]$	1,80,00,000
4. Debtors for 2 months $\left(12,00,000 \times ₹\ 90 \times \frac{2}{12}\right)$	1,80,00,000
Total Current Assets:	4,95,00,000
B – Current liabilities	
5. Creditors for Raw material – 01 month $\left(7,20,00,000 \times \frac{1}{12}\right)$	60,00,000
6. Creditors for wages $\left(12,00,000 \times 10 \times \frac{1}{12}\right)$	10,00,000
Total Current Liabilities	70,00,000
Net working capital	**4,25,00,000**

Problem No - 4

Statement of Working Capital requirements (cash cost basis)

	₹	₹	₹
A. Current Asset:			
Materials	(₹ 9,00,000 / 12)	75,000	
Finished Goods	(₹ 25,80,000 / 12)	2,15,000	
Debtors	(₹ 29,40,000 / 6)	4,90,000	
Cash		1,00,000	
Prepaid expenses (Sales promotion)	(₹ 1,20,000 / 4)	30,000	**9,10,000**
B. Current Liabilities:			
Creditors for Materials	(₹ 9,00,000 / 6)	1,50,000	
Wages outstanding	(₹ 7,20,000 / 12)	60,000	
Manufacturing expenses		80,000	
Administrative expenses	(₹ 2,40,000 / 12)	20,000	**3,10,000**
Net working capital (A-B)			**6,00,000**
Add: Sagety margin @ 20%			**1,20,000**
Total working capital requirements			**7,20,000**

Working Notes:

1.	Computation of Annual Cash Cost of Production	₹
	Material consumed	9,00,000
	Wages	7,20,000
	Manufacturing expenses (₹ 80,000 X 12)	9,60,000
	Total cash cost of production	**25,80,000**
2.	Computation of Annual Cash Cost of Sales:	₹
	Cash cost of production as in 1 above	25,80,000
	Administrative Expenses	2,40,000
	Sales promotion expenses	1,20,000
	Total cash cost of sales	**29,40,000**

Note: Administrative Expenses are not included in Finished Goods valuation.

Problem No - 5

Working Capital Statement of X & Y Ltd.

Particulars	Amount (Rs.)
I. Current Assets:	
a. Raw material Inventory	8,000
b. Finished Goods Inventory	5,000
c. Debtors - Inland sales $\left(\frac{3,12,000}{52}\times 6\right)$	36,000
- Export Sales $\left(\frac{78,000}{52}\times 1.5\right)$	2,250
d. Sundry expenses paid in advance $\left(\frac{8,000}{4}\right)$	2,000
Total current assets (A)	**53,250**
II. Current liabilities:	
a. Creditors for wages $\left(\frac{2,60,000}{52w}\times 1.5w\right)$	7,500
b. Creditors for Raw materials $\left(\frac{48,000}{12\,m}\times 1.5\,m\right)$	6,000
c. Creditors for Rent & Royalties $\left(\frac{10,000}{12m}\times 6m\right)$	5,000
d. Wages to clerical staff $\left(\frac{62,400}{12\,m}\times 0.5m\right)$	2,600
e. Manager Salary $\left(\frac{4800}{12\,m}\times 0.5m\right)$	200
f. Miscellaneous expenses $\left(\frac{48,000}{12\,m}\times 1.5m\right)$	6,000
Current Liabilities (B)	**27,300**
Excess of current assets over current liabilities (A-B)	25,950
Add: Provision for contingencies	2,595
Net Working Capital	**28,545**

Assumptions:

a) 1 year = 12 months = 52 weeks.

b) 100% sales are on credit basis.

c) Undrawn profits are not considered in working capital statement due to the following reasons.

i. For the purpose of the determining working capital provided by net profit it is necessary to adjust the net profit for income tax, dividend, drawings and so on.

ii. Profits need not always be a source of financing working capital. They may be used for other purposes like purchase of fixed assets, repayment of long term loans and so on.

d) The actual working capital requirement would be more than what is estimated here, as the cash component of current assets is not known.

Problem No - 6

Given information, Inventory Norms-

Raw material holding period = 2months

Production Period = ½ month

Finished goods holding period = 1month

Debtors collection period = 1month

Creditor payment period = ½ month

W.N-1: Raw material consumption during year = Opening stock+ Purchases – Closing stock

= 1,40,000 + 7,05,000 – 1,25,000 = Rs. 7,20,000

Step-1: Raw Material Inventory = $\frac{7,20,000}{12\,m} \times 2\,m$ = Rs. 1,20,000 (W.N.-1)

Step-2: W.I.P Inventory

a) Raw Material = $\frac{7,20,000}{12\,m} \times \frac{1}{2} m$ = Rs.30,000

b) Other expenses = $\frac{30,000 \times 12\,m}{12\,m} \times \frac{1}{2} m \times 50\%$ = Rs.7,500

∴ Value of W.I.P = Rs.37,500

Step-3: Finished Goods Inventory = $\frac{\text{Cash COP during Yr}}{12\,m} \times \text{FGHP}$

$= \frac{10,80,000\ \ (12\text{Lacs} - 1.2\text{Lacs})}{12\,m} \times 1\,m$

= Rs. 90,000

Step-4: Investment In debtors = $\frac{\text{Cash Cost of Sales}}{12\text{m}} \times \text{DCP} = \frac{10,80,000}{12\text{m}} \times 1\text{m}$ = Rs.90,000

Step-5: Creditors for Raw Materials = $\frac{\text{cr. purchases}}{12\text{m}} \times \text{CPP} = \frac{7,05,000}{12\text{m}} \times \frac{1}{2}\text{m}$ = Rs.29,375

Working Capital Statement

Particulars	Amount
I. Current assets:	
a. Raw Material inventory	1,20,000
b. Work in Progress	37,500
c. Finished Goods inventory	90,000
d. Debtors	90,000
e. Minimum cash balance	35,000
Total (A)	**3,72,500**
II. Current liabilities:	
a. Creditors for Raw Material	29,375
b. Advance received from customers	15,000
Total (B)	**44,375**
Net working capital (A – B)	**3,28,125**

Note:

1. All purchases and sales are assumed to be made on credit.
2. Credit for monthly expenses is not provided. It is assumed that such expenses will be met from cash balance.
3. It is assumed that Raw Material is finished to the extent of 100% and other expenses are finished to the extent of 50%.
4. It is assumed that cash cost of Production = Cost of Sales.
5. Expenses are already included in working capital.

Problem No - 7

Statement of cost at single shift and double shift working

	24,000 units		48,000 units	
	Per Unit	Total	Per Unit	Total
	₹	₹	₹	₹
Raw materials	12	2,88,000	10.80	5,18,400
Wages-Variable	6	1,44,000	6.00	2,88,000
Fixed	4	96,000	2.00	96,000

Overheads – Variable	2	48,000	2.00	96,000
Fixed	8	1,92,000	4.00	1,92,000
Total cost	**32**	**7,68,000**	**24.80**	**11,90,400**
Profit	4	96,000	11.20	5,37,600
	36	**8,64,000**	**36.00**	**17,28,000**

Sales in units 2012-13 $= \frac{\text{Sales}}{\text{Unit selling price}} = \frac{₹\,8,64,000}{₹36} =$ 24,000 units

Stock of Raw Materials in units on 31.03.2013 $= \frac{\text{Value of stock}}{\text{Cost per unit}} = \frac{₹\,72,000}{₹\,12} =$ 6,000 units

Stock of work-in-progress in units on 31.03.2013 $= \frac{\text{Value of work - in - progress}}{\text{Cost per unit}} = \frac{₹\,44,000}{(₹12 + ₹10)}$

= 2,000 units

Stock of finished goods in units 2012-13 = $\frac{\text{Value of stock}}{\text{Cost per unit}} = \frac{₹1,44,000}{₹\,32}$ = 4,500 units.

Comparative Statement of Working Capital Requirement

	Single Shift			Double Shift		
	Unit	Rate ₹	Amount ₹	Unit	Rate ₹	Amount ₹
Current Assets Inventories -						
Raw Materials	6,000	12	72,000	12,000	10.80	1,29,600
Work-in-Progress	2,000	22	44,000	2,000	18.80	37,600
Finished Goods	4,500	32	1,44,000	9,000	24.80	2,23,200
Sundry Debtors	6,000	32	1,92,000	12,000	24.80	2,97,600
Total Current Assets: (A)			**4,52,000**			**6,88,000**
Current Liabilities						
Creditors for Materials	4,000	12	48,000	8,000	10.80	86,400
Creditors for Wages	1,000	10	10,000	2,000	8.00	16,000
Creditors for Expenses	1,000	10	10,000	2,000	6.00	12,000
Total Current Liabilities: (B)			**68,000**			**1,14,400**
Working Capital: (A) – (B)			**3,84,000**			**5,73,600**

Increase in Working Capital requirement is (₹ 5,73,600 - ₹ 3,84,000) or ₹ 1,89,600

Notes:

1. The quantity of material in process will not change due to double shift working since work started in the first shift will be completed in the second shift.
2. The valuation of work-in-progress based on prime cost as per the policy of the company is as under.

	Single shift ₹	Double shift ₹
Materials	12.00	10.80
Wages – Variable	6.00	6.00
Fixed	4.00	2.00
Prime Cost	22.00	18.80

Problem No - 8

(₹ in Crores)

		Working Capital Investment Policy		
		Conservative	**Moderate**	**Aggressive**
1.	Current assets	11.475	9.945	6.630
2.	Fixed assets	6.630	6.630	6.630
3.	Total assets	18.105	16.575	13.26
4.	Current liabilities	5.967	5.967	5.967
5.	Estimates sales	31.365	29.325	25.50
6.	Estimated EBIT	3.1365	2.9325	2.55
7.	Current ratio {(1) / (4)}	1.92	1.67	1.11

Computation of following for each policy:

a)	Rate of return on total assets (in percentages): [(6)/(3) X 100]	17.32	17.69	19.23
b)	Net working capital position: (in crores) [(1) - (4)]	5.508	3.978	0.663
c)	Current assets to fixed assets ratio: [(1) / (2)]	1.73	1.50	1.00
d)	Risk-return trade off: The net working capital or current ratio is a measure of risk. Rate of return on total assets is a measure of return. The expected risk and return are minimum in the case of conservative investment policy and maximum in the case of aggressive investment policy. The firm can improve profitability by reducing investment in working capital.			

Problem No - 9

Part A

Returns on Current Assets = 8,000 X 2% = Rs. 160

Returns on Fixed Assets = 16,000 X 14% = Rs.2,240

Total profits on Assets Rs.2,400

Ratio of current assets to total assets = $\frac{\text{Current Assets}}{\text{Total Assets}} = \frac{8{,}000}{24{,}000} = 1:3$

Part - B

Cost of Current Liabilities = 2,000 X 4% = Rs. 80

Cost of Long Term Funds = 22,000 X 10% = Rs.2,200

Cost of financing Rs.2,280

Ratio of Current Liabilities to Total Assets = $\frac{\text{Current Liabilities}}{\text{Total Assets}} = \frac{2,000}{24,000} = \frac{1}{12} = 1 : 12$

Part - C

Net Profitability from the existing financial plan = 2,400 – 2,280 = Rs. 120

Problem No - 10

Calculation of MPBF as per Tandon Committee norms (Rs. In Lakhs)

Given, Current Assets = 500

Current Liabilities = 150 (Bank borrowings not included)

Core Current Assets = 200

Method I: MPBF = 0.75 (Current Assets – Current Liabilities) = 0.75 (500-150) = Rs.262.5

Therefore, Additional finance that can be obtained from banker = 262.5-50 = Rs.212.5

Method II: MPBF = 0.75 (Current Assets) – Current Liabilities = 0.75 (500) – 150 = Rs.225

Therefore, Additional finance that can be obtained from banker = 225 - 50 = Rs.175

Method III: MPBF = 0.75 (Current Assets – Core Current Assets) – Current Liabilities

= 0.75 (500-200) – 150 = Rs. 75

Therefore, Additional finance that can be obtained from banker = 75 - 50 = Rs.25

Problem No - 11

Calculation of MPBF as per Tandon Committee norms (Rs. In Lakhs)

Given, Current Assets = 360

Current Liabilities = 120

Core Current Assets = 180

Method I: MPBF = 0.75 (Current Assets – Current Liabilities) = 0.75 (360-120) = Rs.180

Therefore, Additional finance that can be obtained from banker = 180-180 = Rs.0

Method II: MPBF = 0.75 (Current Assets) – Current Liabilities = 0.75 (360) – 120 = Rs.150

Therefore, Additional finance that can be obtained from banker = 150 - 180 = (Rs. 30)

Method III: MPBF = 0.75 (Current Assets – Core Current Assets) – Current Liabilities

= 0.75 (360-180) – 120 = Rs. 15

Therefore, Additional finance that can be obtained from banker = 15 - 180 = (Rs.165)

Problem No - 12

Calculation of Net Operating Cycle Period

Particulars	Calculations	No.of days
RMCP = $\frac{\text{Avg RM inv.}}{\text{RM cons.}} \times 365$	$\frac{50,000}{6,00,000} \times 365$	30
W.I.PCP = $\frac{\text{Avg. WIP inv.}}{\text{COP}} \times 365$	$\frac{30,000}{5,00,000} \times 365$	22
FGCP = $\frac{\text{Avg. FG inv}}{\text{COGS}} \times 365$	$\frac{40,000}{8,00,000} \times 365$	18
RCP = $\frac{\text{Avg. debtors.}}{\text{Cr. Sales}} \times 365$		45
Total Operating Cycle Period		**115**
Less: DP = $\frac{\text{Avg. creditors}}{\text{cr. purchases}} \times 365$		30
Net Operating Cycle Period		**85**

No. of Operating Cycles in a year = $\frac{365}{85}$ = 4 cycles (approx)

Problem No - 13

Computation of Operating Cycle:

Particulars	Year 1	Year 2
RMHP	$\frac{20,000}{96,000} X 360 = 75$ days	$\frac{23,500}{1,28,000} X 360 = 66$ days
WIPHP	$\frac{14,000}{1,40,000} X 360 = 36$ days	$\frac{16,000}{1,83,000} X 360 = 31$days
FGHP	$\frac{21,000}{1,40,000} X 360 = 54$ days	$\frac{22,500}{1,80,000} X 360 = 45$ days
DCP	$\frac{32,000}{1,60,000} X 360 = 72$ days	$\frac{41,000}{2,00,000} X 360 = 74$ days
Less: CCP	$\frac{16,000}{96,000} X 360 = 60$ days	$\frac{17,000}{1,35,000} X 360 = 45$ days
Net Operating Cycle	**= 177 days**	**= 171 days**

Working Notes:

1. RM Consumption for year 2:

RM Consumption = O/S + RM purchases – O/S

= 20,000 + 1,35,000 – 27,000 = 1,28,000

2. Avg. stock of RM for Year 2 = $\frac{20,000 + 27,000}{2} = 23,500$

3. Cost of production for Year 2:

COP = COGS – OS of FG + CS of FG

= 1,80,000 – 21,000 + 24,000

= 1,83,000

4. Avg. WIP = $\frac{14,000+18,000}{2}=16,000$

5. *Avg*. FG = $\frac{21,000+24,000}{2}=22,500$

6. Cost Debtors Avg. = $\frac{82,000}{2}=41,000$

7. Avg. Creditors = $\frac{16,000+18,000}{2}=17,000$

8. For year 1 closing Inventories are considered & for year 2 Average inventories are taken in calculations

9. In year 1 purchases are assumed to be consumption.

Problem No - 14

Under Existing situation:

Given, Cash turnover = 4.5 times

1 year = 360 days (assuming)

Net operating cycle period = $\frac{360}{4.5}=80$

Minimum desired cash balance = $\frac{1,75,000}{4.5}$ = Rs.38,890

Under Proposed situation:

Given,

Accounts payable can be stretched by 20 days

Therefore, net operating cycle period = 80 – 20 = 60 days

Minimum desired cash balance = $\frac{1,75,000}{360}\times 60$ = Rs.29,167

Reduction in minimum desired cash balance = Rs.38,890 – Rs.29,167 = Rs.9,723

Savings there on = 9,723 x 8% = Rs.778.

Problem No - 15

Additional Contribution earned by the Company:

Proposed Sales : [25 L X $\frac{12}{2}$]	= 150 L
Present Sales: [10 L X12]	= 120 L
Additional Sales during the CY	= 30 L

Contribution (%) = 40% (given)

Additional Contribution = 30 L X 40% = 12 L

Problem No - 16

Cr. Period = 36 days

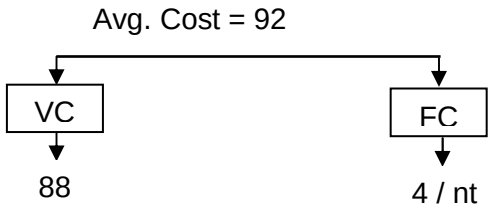
Present sales = 20,000 units

Volume: SP =100/-

Cr. Period = 60 days

= 22,000 units

Opportunity Cost = 15%



Fixed cost = 4 X 20,000 = 80,000 /-

Evaluation of Credit Policy:

Particulars	Present 36 days	Proposed 60 days	Incremental
A. Benefit:			
a) Sales Volume	20,000 units	22,000 units	2000 units
b) Sales Revenue (a X 100)	20 L	22 L	2 L
c) Contribution @ 12%	2.4 L	2.64 L	24,000/-
d) Fixed Cost	80,000	80,000	-
e) Profit	1,60,000	1,84,000	24,000
B. Cost			
Proposed inv. In Drs (22 L X $\frac{60}{365}$)			= 3,61,644
Present inv. In Drs (20L X $\frac{36}{365}$)			= (1,97,260)
Add. Inv. In Drs (SV)			1,64,384
Variable cost @ 88% = 1,64,384 X 88% = 1,44,658/-			
Savings = 1,44,658 X 15% = 21,699/- **C. Net Benefit: A-B** = 24,000- 21,699 = **2301/-**			

Conclusion: Since there is an incremental benefit of ₹ 2301 therefore it is beneficial for the company to extend its credit period from 36 days to 60 days

Problem No - 17

New level of sales will be 15,00,000 X 1.15 = ₹ 17,25,000

Variable costs are 80% X 75% = 60% of sales

Contribution from sales is therefore 40% of sales

	₹	₹
Proposed investment in debtors = 17,25,000 X 60 / 365 =		2,83,562
Current investment in debtors = 15,00,000 X 30 / 365		1,23,288
Increase in investment in debtors		**1,60,274**
Increase in contribution = 15% X 15,00,000 X 40% = (2,25,000x 40%)		90,000
New level of bad debts = 17,25,000 X 4% =	69,000	
Current level of bad debts (15L x 1%)	15,000	
Increase in bad debts		(54,000)
Additional financing costs = 1,60,274 X 12% =		(19,233)
Savings by introducing change in policy		**16,767**

Advise: The financing policy is financially acceptable, although the savings are not great.

Problem No - 18

	Present Policy	Proposed Policy	
	1 month	**2 months**	**3 months**
A. Sales (Units)	10,000	11,500	13,000
B. Sales income	30,00,000	34,50,000	39,00,000
Variable cost at ₹ 200 per unit	20,00,000	23,00,000	26,00,000
Contribution	10,00,000	11,50,000	13,00,000
Fixed Costs	3,00,000	3,00,000	3,50,000
C. Net Margin	7,00,000	8,50,000	9,50,000
D. Investment in receivable	$23L \times \frac{1}{12} =$ 1,91,666	$26L \times \frac{2}{12} =$ 4,33,333	$29.5L \times \frac{3}{12} =$ 7,37,500
E. Expected Return on receivables at 20%	38,333	86,666	1,47,500
F. Bad Debts	30,000	1,03,500	1,95,000
G. Net Profit (C-E-F)	6,31,667	6,59,834	6,07,500
H. Increase in profits	-	28,167	6,07,500- 6,31,667= (-) 24,167

Advise: Sonachandi Limited should adopt the 2 months credit policy as it yields higher return.

Problem No - 19

Evaluation of the Different Options in Credit Policy of JKL Ltd

(₹ in lakhs)

Credit period	1 month Current position	1.5 months Option I	2 months Option II	3 months Option III
Sales	200	210	220	250
Contribution @ 40%	80	84	88	100
Increase in contribution over current	-	4	8	20 (A)
Debtors (Valued on Sales)	$\frac{1X200}{12}$ =16.67	$\frac{1.5X210}{12}$ =26.25	$\frac{2X220}{12}$ =36.67	$\frac{3X250}{12}$ =62.50
Average Collection Period X Credit Sales:				
Increase in debtors over current level	-	9.58	20.00	45.83
Cost of funds for additional amount of debtors@20%	-	1.92	4.00	9.17 (B)
Credit administrative cost	1.20	1.30	1.50	3.00
Increase in credit administration cost over present level	-	0.10	0.30	1.80 (C)
Bad debts	4.00	5.25	6.60	12.50
Increase in bad debts over current levels	-	1.25	2.60	8.50
Net gain/loss A-(B+C+D)	**-**	**0.73**	**1.10**	**0.53**

Advise: It is suggested that the company JKL Ltd. should implement Option II which has a credit period of 2 months.

Problem No - 20

In-house Decision	₹
Cash discount (₹ 90 lakhs X .60 X .02)	1,08,000
Bad debts losses (90,00,000 X .01)	90,000
Administration cost	1,20,000
Cost of funds in receivables	1,08,750
	4,26,750
Average collection period (10 X .6) + (60 days X .40) = 30 days	

Average investments in debtors = $\frac{90}{12}$ = 7.5 lakhs	
Cost of Bank funds $\left(₹7.5 X \frac{1}{2} X .15\right)$	56,250
Cost of Owned funds $\left(₹7.5 X \frac{1}{2} X .14\right)$	52,500
	1,08,750
Offer Alternative	
Factoring commission (₹ 90 lakhs X .04)	3,60,000
Interest charges .88 (90 lakhs – 3,60,000) = 76,03,200 X .15 X $\frac{25}{360}$	79,200
Cost of owned funds invested in receivables (90,00,000 – 76,03,200) X .14 X $\frac{25}{360}$	13,580
	4,52,780

Decision: PQR should not go for the factoring alternative as the cost of factoring is more.

Cost of In-house Decision	4,26,750
Cost of Factoring Firm	4,52,780
Net Loss	**(26,030)**

Problem No - 21

Computation of Effective Cost of Factoring	
Average level of Receivables = 12,00,000 X 90 / 360	3,00,000
Factoring Commission = 3,00,000 X 2 / 100	6,000
Factoring Reserve = 3,00,000 X 10/100	30,000
Amount Available for Advance = ₹ 3,00,000 – (6,000 + 30,000)	2,64,000
Factor will deduct his interest @ 16%:- Interest = $\frac{₹ 2,64,000 X 16 X 90}{360X100}$ = ₹ 10,560 Advance to be paid = ₹ 2,64,000 -₹ 10,560 = ₹ 2,53,440	
Annual Cost of Factoring to the Firm:	**₹**
Factoring Commission (₹ 6,000 X 360 /90)	24,000
Interest Charges (₹ 10,560 X 360 / 90)	42,240
Total	**66,240**
Firm's Savings on taking Factoring Service:	**₹**
Cost of Administration Saved	50,000
Cost of Bad Debts (₹ 12,00,000 X 1.5 / 100) avoided	18,000
Total	**68,000**
Net Benefit to the Firm (₹ 68,000 - ₹ 66,240)	1,760
Effective Cost of Factoring = $\frac{₹ 66,240 X 100}{2,53,440}$	**26.136 %**

Effective Cost of Factoring = 26.136 %

Problem No - 22

Workings:

1. Sale receipts

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Forecast sales (S)	1,000	1,000	1,000	1,250	1,500	2,000	1,900	2,200
	₹	₹	₹	₹	₹	₹	₹	₹
S X 15	15,000	15,000	15,000	18,750	22,500	30,000	28,500	33,000
Debtors pay:								
1 month 40%		6,000	6,000	6,000	7,500	9,000	12,000	11,400
2 month 60%		-	9,000	9,000	9,000	11,250	13,500	18,000
	-	-	15,000	15,000	16,500	20,250	25,500	29,400

2. Payment for materials – books produced two months before sale

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Qty produced (Q)	1,000	1,250	1,500	2,000	1,900	2,200	2,200	2,300
	₹	₹	₹	₹	₹	₹	₹	₹
Materials (QX5)	5,000	6,250	7,500	10,000	9,500	11,000	11,000	11,500
Paid (2 months after)	-	-	5,000	6,250	7,500	10,000	9,500	11,000

3. Variable overheads

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Qty produced (Q)	1,000	1,250	1,500	2,000	1,900	2,200	2,200	2,300
	₹	₹	₹	₹	₹	₹	₹	₹
Var. overhead (QX2)	2,000	2,500	3,000	4,000	3,800			
Var. overhead (QX2.50)						5,500	5,500	5,750
Paid one month later		2,000	2,500	3,000	4,000	3,800	5,500	5,500

4. Wages payments

Month	Dec	Jan	Feb	Mar	Apr	May	Jun
Qty produced (Q)	1,250	1,500	2,000	1,900	2,200	2,200	2,300
	₹	₹	₹	₹	₹	₹	₹
Wages (Q X 4)	5,000	6,000	8,000				
Wages (Q X 4.50)				8,550	9,900	9,900	10,350
75% this month	3,750	4,500	6,000	6,412	7,425	7,425	7,762
25% this month		1,250	1,500	2,000	2,137	2,475	2,475
		5,750	7,500	8,412	9,562	9,900	10,237

Cash budget – six months ended June

	Jan ₹	Feb ₹	Mar ₹	Apr ₹	May ₹	Jun ₹
Receipts:						
Credit sales	15,000	15,000	16,500	20,250	25,500	29,400
Premises disposal	-	-	-	-	25,000	-
	15,000	15,000	16,500	20,250	50,500	29,400
Payments:						
Materials	5,000	6,250	7,500	10,000	9,500	11,000
Var. overheads	2,500	3,000	4,000	3,800	5,500	5,500
Wages	5,750	7,500	8,412	9,562	9,900	10,237
Fixed assets	-	-	-	-	10,000	-
Corporation tax	-	-	10,000	-	-	-
	13,250	16,750	29,912	23,362	34,900	26,737
Net cash flow	1,750	(1,750)	(13,412)	(3,112)	15,600	2,663
Balance b/f	1,500	3,250	1,500	(11,912)	(15,024)	576
Cumulative cash flow	3,250	1,500	(11,912)	(15,024)	576	3,239

Problem No - 23

Given information,

Reduction in mailing float = 2.5 days

Reduction in processing float = 1 day

Opportunity cost of capital = 5%

Average collection per day = Rs. 5,00,000

Evaluation of the proposal of lock box system

Particulars	Amount
A. Cost	
Service Charge of Lock Box System	75,000
B. Benefit	
Reduction in float = 3.5 days Reduction in Average Cash Balance = Rs.5,00,000 x 3.5 = 17,50,000 Savings in opportunity cost of loss of interest = Rs.17,50,000 x 5%	87,500
Net Benefit (A - B)	**12,500**

Conclusion: It is advisable to initiate lock box system.

THE END