6. WORKING CAPITAL MANAGEMENT

PROBLEM NO: 1

a) Inventory Norms

Particulars	Period
a. Raw material	2
b. Work in progress	4
c. Finished goods	3
d. Debtors	8
e. Creditors	4

b) Cost sheet

Particulars	Amount
Raw material @20	1,40,000
Direct labour @35	2,45,000
Over heads @15	1,05,000
Cost of production	4,90,000
Profit	2,10,000
Sales	7,00,000

c) Estimation of individual CA:

i) Stock of Raw Material $= \frac{RMCDY}{52} \times RMHP$

$= \frac{1,40,000}{52} \times 2 = 5,385$

ii) Work in progress $= \frac{RMCDY}{52} \times WIPHP \times 100\%$

$= \frac{1,40,000}{52} \times 4 \times 100\% = 10,769$

iii) Wages $= \frac{WAGES\ INCURED}{52} \times WIPHP \times 50\%$

$= \frac{2,45,000}{52} \times 4 \times 50\% = 9,423$

iv) Overheads $= \frac{OVERHEADS\ INCURED}{52} \times WIPHP \times 50\%$

$= \frac{1,05,000}{52} \times 4 \times 50\% = 4,038$

v) Stock of finished goods $= \frac{CASH\ COST\ OF\ PRODUCTION}{52} \times FGHP$

$= \frac{4,90,000}{52} \times 3 = 28,269$

vi) Debtors $= \frac{CREDIT\ SALES}{52} \times DCP$

$= \frac{7,00,000}{52} \times 8 = 1,07,692$

vii) Estimation of Individual CL:

Trade Creditors $= \frac{Credit\ Purchases}{52} \times CPP$

$= \frac{1,40,000}{52} \times 4 = 10,769$

Statement Showing Working Capital Requirement Of Musa Ltd.

PARTICULARS		AMOUNT (Rs)
I. Current Assets:		
a. Stock of Raw Material (wn-1)		5,835
b. Work In Progress		
i. stock of raw material (w.n-2)		10,769
ii. wages (w.n-3)		9,423
iii. over heads (w.n-4)		4,038
c. Finished goods (w.n-5)		28,269
d. Debtors (w.n-6)		1,07,692
	Total (A)	1,65,576
II. Current Liabilities:		
a. Trade Creditors (w.n-7)	Total (B)	10,769
Net Working Capital	(A-B)	1,54,807

PROBLEM NO: 2

Statement showing estimation of working cap requirement

Particulars	Calculation	Amount (Rs.)
A) Current Assets		
I) Inventories		
i) Raw materials	$\frac{26000 \times 3.00}{52} \times 3 = 4500$	4500
ii) Work-in-process		
a) Raw Material	$\frac{26000 \times 3.00}{52} \times 3 = 4500$	
b) Labour	$\frac{26000 \times 4}{52} \times 3 \times \frac{1}{2} = 300$	
c) O.H Exp	$\frac{26000 \times 2}{52} \times 3 \times \frac{1}{2} = 1500$	9000
iii) Finished Goods	$\frac{26000 \times 9}{52} \times 2$	9000
iv) Debtors	$\frac{26000 \times 9}{52} \times 8$	36000
Total Currant Assets		58500
B) Current Liabilities		
i) Creditors for R.M.S	$\frac{26000 \times 3}{52} \times 5$	7500
Total Current liabilities		7500
Net working Cap (A-B)		51000

Assumptions:

i) Level of activity will remain unchanged.

ii) Cost structure will remain unchanged.

iii) Various components of operating cycle will remain unchanged

iv) Assume 1 year = 52 weeks

v) 100% Sales in on credit basis.

vi) 100% purchases is on credit basis

vii) 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: 3

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 $= \frac{\text{Annual production} \times \text{RM Cost} \times \text{RM Cost / nt}}{12\text{m}} \times \text{RMHP}$

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

2. Stock of WIP:

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

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

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

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

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

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

Total Stock of WIP = 1,80,000.

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

$$= \frac{54,000 \times 110}{12} \times 1$$

$$= 4,95,000/-$$

4. Inventory in Debtors:

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

$$= 75\% \times \frac{54,000 \times 110}{12} \times 1 = 3,71,250/-$$

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

6. Creditors:

RM $= \frac{\text{RM Consumption during the Year}}{12m} \times \text{CRP}$

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

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

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

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

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

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 Rs.	Amount Rs.
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 $= \frac{\text{Annual production X RM Cost X RM Cost / nt}}{12\text{m}} \text{ X RMHP}$

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

2. Stock of WIP:

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

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

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

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

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

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

Total Stock of WIP = 1,68,750.

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

$= \frac{54{,}000 \text{ X } 100}{12} \text{X1}$

$= 4{,}50{,}000/-$

4. Inventory in Debtors:

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

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

5. Creditors same as above.

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

PROBLEM NO: 4

INVENTORY NORMS:

Particular	Period
RMHP	1m
FGHP	1m
WIP HP	-
DCP	2m
CCP	2m
Time lag:	
Wages	1m
Manufacturing Expenses	1m
Administration Expenses	1m
Sales Promotion	1 Quarter

COST SHEET

Particulars	Amount
a. Raw Material (Total)	6,75,000
b. Wages	5,40,000
c. Manufacturing Expenses	7,20,000
6,00,000 → 1m ? → ½ m	
d. Administrative Expenses	1,80,000
e. Total Cost of Production	21,15,000
f. Sales Promotion	90,000
g. Cash Cost of Sales	22,05,000

Calculation of Individual C.A.

i) RMCP $= \frac{RMCDY}{12m} \times RMHP = \frac{6,75,000}{12} \times 1m$

$= 56,250$

ii) WIP = nil

- In Cash Basis, We Should Not

iii) Stock of FG $= \frac{\text{Cash Cost of Production}}{12} \times FGHP = \frac{21,15,000}{12} \times 1m$

$= 1,76,250$

iv) DCP $= \frac{22,05,000}{12} \times 2m = 3,67,500$

v) Cash = Total Current Liability x 50%

= 2,32,500 x 50% = 1,16,250

vi) Advances = Sales Promotion Expenses / 4

= 90,000 / 4 = 22,500

Current Liabilities:

Creditors $= \frac{\text{Credit Purchases}}{12} \times CCP = \frac{6,75,000}{12m} \times 2m$

= 1,12,500

Time Lag:

Wages $= \frac{\text{Wages incurred}}{12m} \times 1m$

$= 45,000$

Mfg exp = 60,000(given)

Admin exp $= \frac{\text{Admin incurred}}{12m} \times 1m$

$= \frac{1,80,000}{12} \times 1m$

$= 15,000$

Statement showing working capital requirement:

Particulars	Amount Rs
I) current assets:	
a) cash	1,16,250
b) inventories	
i) raw materials	56,250
ii) w.i.p	-
iii) finished goods	1,76,250
c) debtors	3,67,500
d) advances	22,500
TOTAL(A)	7.38.750
II) current liabilities	
a) creditors	1,12,500
b) wages	45,000
c) manufacturing exp	RS60,000
d) administrative exp	15,000
TOTAL(B)	2,32,500
III) net working capital(A-B)	5,06,250
ADD: Safety margin @15%(5,06,250*15%)	75,938
Working capital	5,82,188

ASSUMPTIONS:

1. Credit purchases are assumed to be raw material consumed.
2. Debtors are valued on the basis of cash cost of production.
3. Finished goods are valued on the basis of cash cost of production.
4. In a year represents 12 months peroiod.

PROBLEM NO: 5

Particulars	Calculation	Amount (Rs.)
A) : Current Assets		
I) Inventories		
i) Raw materials	$\frac{1200000 \times 60}{12} \times 1$	6000000
ii) Work-in-process		
a) Raw Material	$\frac{1200000 \times 60}{12} \times 1 = 60000000$	

b) Wages	$\frac{1200000 \times 10}{12} \times 1 \times \frac{1}{2} = 500000$	
c) O.H Exp	$\frac{1200000 \times 20}{12} \times 1 \times \frac{1}{2} = 1000000$	7500000
iii) Finished Goods	$\frac{1200000 \times 90}{12} \times 2$	18000000
II) Debtors	$\frac{1200000 \times 90}{12} \times 2$	18000000
Total Current Assets		49500000
B) : Current Liabilities		
i) Creditors for RMS	$72000000 \times \frac{1}{12}$	6000000
ii) Creditors for Wages	$\frac{1200000 \times 10}{12} \times 1$	1000000
Total Current liabilities		7000000
C) Net working Cap (A - B)		42500000

PROBLEM NO: 6

Particulars	Calculation	Amount (Rs.)
A) : Current Assets		
I) Inventories		
i) Raw Material	$\frac{(140000 + 705000 - 125000)}{12} \times 2$	12000
ii) Work-in-process		
a) Raw materials	$\frac{720000}{12} \times 0.5 = 30000$	
b) Wages & Exp	$\frac{360000}{12} \times 0.5 \times 0.5 = 7500$	37500
iii) Finished goods	$\frac{(1200000 - 120000)}{12} \times 1$	90000
II) Debtors	$\frac{1080000}{12} \times 1$	90000
III) Cash balance		35000
Total Current Assets		372500
B) : Current Liabilities		
i) Raw Materials	$\frac{705000}{12} \times 1$	29375
ii) Adv from Customers		15000
Total Current Liabilities		44375
C) : Net working Cap (A-B)		328125

PROBLEM NO: 7

Particulars	Calculation	Amount (Rs.)
A) : Current Assets		
I) Inventories		
i) Raw materials		8000
ii) Work-in-process		0
iii) Finished Goods		5000
iv) Debtors		

a) Inland sales	$\frac{312000}{52}$ x6	36000
b) Export sales	$\frac{78000}{52}$ x1.5 s	2250
II) Prepaid Exp	$\frac{8000}{4}$	2000
Total Current Assets (A)		**53250**
B) : Current Liabilities		
i) Stores & Materials	$\frac{48000}{12}$ x1.5	6000
ii) Wages	$\frac{260000}{15}$ x1.5	7500
iii) Rent & Royalties	$\frac{10000}{12}$ x6	5000
iv) Clerical Staff	$\frac{62400}{12}$ x0.5	2600
v) Manager	$\frac{4800}{12}$ x0.5	200
vi) Misce Exp.	$\frac{48000}{12}$ x1.5	6000
Total Current Liabilities		**27300**

Net Working Capital (A-B) 25950

Add: Safety margin@10% (25950 x 10%) 2595

Total working capital **28545**

PROBLEM NO: 8

PART – A

Given Information, Inventory Norms,

Raw material holding period (RMHP) = 2 months

Production Period (P.P) = 1 month

Finished goods holding period (FGHP) = 3 months

Debtors Collection period (DCP) = 3 months

Creditors payment period (CPP) = 2 months

W.N-1:

Cost structure

Particulars	Per Unit
Raw materials (5×60%)	3.0
Wages (5×10%)	0.5
Overhead (5×20%)	1.0
Cost of Production per Unit	4.5
Add: Profit	0.5
Selling price per unit	5.0

Step-1: Raw material inventory = $\frac{\text{R.M.Consumption during yr}}{12\text{m}} \times \text{R.M.H.P} = \frac{60{,}000 \times \text{Rs.}3}{12\text{m}} \times 2\text{m} = 30{,}000$

Step-2: W.I.P inventory

a) Raw material $= \frac{\text{RM Consumption During Yr}}{12\text{ m}} \times \text{P.P} = \frac{60{,}000 \times \text{Rs.}3}{12\text{m}} \times 1\text{m} = \text{Rs.}15{,}000$

b) Wages $= \frac{60{,}000 \times 0.50}{12\text{ m}} \times 1\text{m} \times 50\% = \text{Rs. } 1250$

c) Overheads $= \frac{60{,}000 \times 1}{12\text{m}} \times 1\text{m} \times 50\% = \text{Rs. } 2{,}500$

∴ W.I.P = Rs. 18,750

Step-3: F.G Inventory $= \frac{60{,}000 \times 4.50}{12\text{m}} \times 3\text{m} = \text{Rs.}67{,}500$

Step-4: Investment in debtors $= \frac{60{,}000 \times 4.5}{12\text{m}} \times 3\text{m} = \text{Rs.}67{,}500$

Step-5: Creditors for RM $= \frac{60{,}000 \times 3}{12\text{m}} \times 2\text{m} = \text{Rs. } 30{,}000$

Working Capital Statement

Particulars	Amount
i) Current assets:	
a. Raw Material inventory (Step-1)	30,000
b. W.I.P inventory (Step-2)	18,750
c. F.G inventory (Step-3)	67,500
d. Debtors (Step-4)	67,500
Total (A)	**1,83,750**
ii) Current liabilities:	
Creditors (B) (Step-5)	30,000
Net working capital (A-B)	**1,53,750**

PART – B

Estimated profit for the year ended 31.12.00.

Particulars	Amount	Particulars	Amount
To Raw material a/c (60,000 × 3)	1,80,000	By sales a/c	3,00,000
To Wages a/c (60,000×0.5)	30,000	(60,000 ×5)	
To Overhead a/c (60,000×1)	60,000		
To Interest on debentures a/c (50,000×5%)	2,500		
To Net profit	27,500		
	3,00,000		**3,00,000**

Balance Sheet as on 31st Dec.2000

Liabilities	Rs.	Assets	Rs.
Equity Share Capital	2,00,000	Fixed Assets	1,25,000
5% Debentures	50,000	Raw material Inventory	30,000
Creditors for raw material	30,000	W.I.P Inventory	18,750
Net profit	27,500	F.G. Inventory	67,500
Reserve & Surplus (B/F)	1,250	Debtors	67,500
	3,08,750		**3,08,750**

PROBLEM NO: 9

Statement showing the requirements of Working Capital

PARTICULARS		RS
A. CURRENT ASSETS		
Stock of Raw material	**9,66,000 x 2/12**	1,61,000
Stock of Work-in-progress	**As per Working Note**	1,63,500
Stock of Finished goods	14,65,000 x 10/100	1,46,500
Debtors	12,70,800 x 2/12	2,11,800
Cash in Hand		80,000
Total Current Assets		7,62,800
B. Current Liabilities:		
Creditors for Raw materials	11,27,000 x 1.5/12	1,40,875
Provision for Taxation (Net of Advance Tax)	1,00,000 x 30/100	30,000
O/s Wages and Mfg expenses	6,62,500 x 1/12	55,208
O/s Administrative Expenses	1,40,000 x 1/12	11,667
O/s Selling and Distribution expenses	1,30,000 x 1/12	10,833
Total Current Laibilities		2,48,583
C. Net Working Capital	(A – B)	**5,14,217**

Working Notes:

i) Calculation of Stock of Work-in-progress

Particulars		Rs
Raw Material	(8,40,000 x 15%)	1,26,000
Wages & Mfg. Expenses	**(6,25,000 x 15% x 40%)**	**37,500**
Depreciation	(2,35,000 x 15% x 40%)	-
Total		1,63,500

ii) Calculation of Stock of Finished Goods and Cost of Sales

Particulars		Rs
Direct material Cost	[Rs.8,40,000 +Rs.1,26,000]	9,66,000
Wages & Mfg. Expenses	[Rs.6,25,000+ Rs.37,500]	6,62,500
Depreciation	[Rs.2,35,000 +Rs.14,100]	
Gross Factory Cost		16,28,500
Less: Closing W.I.P		-1,63,500
Cost of goods produced		14,65,000
Less: Closing stock		-1,46,500
Cost of goods sold		13,18,500
Add: Administrative Expenses		1,40,000
Add: Selling and Distribution Expenses		1,30,000
Total Cash Cost of Sales		15,88,500
Debtors (80% of cash cost of sales)		12,70,800

iii) Calculation of Credit Purchase

Particulars	**Rs**
Raw Material consumed	9,66,000
Add:Closing Stock	1,61,000
Less:Opening Stock	-
Purchases	11,27,000

PROBLEM NO: 10

Step 1: Preparation of rough cost sheet for single and double shift

Particulars	Single Shift (24000)			Double Shift (48000)		
	Unit	cost	Total	Unit	Cost	Total
i) Raw materials	12		288000	10.80		518400

ii) Wages						
Variable (60%)	6			6		
Fixed (40%)	6	10	240000	2	8.00	384000
iii) Overheads						
Variable (20%)	2			2		
Fixed (80%)	8	10	240000	4	6.00	288000
iv) Cost of Production		32	768000		24.8	1190400
v) Profit		4	96000		11.20	537600
vi) Sales		36	864000		36.00	1728000

WORKING: Single – Shift – No of Units

$$\text{No. of units} = \frac{\text{Sales Revenue}}{\text{Selling price}}$$

$$= \frac{864000}{36}$$

$$= 24000$$

Step 2: Statement showing estimation of W cap req for single and double shift

Particulars	Singles shift			Double shift		
	No. of Units	Cost P.U	Amount	No. of Units	Cost P.U	Amount
A) : Current Assets						
I) Inventories						
a) Raw materials	6000	12	72000	12000	10.80	129600
b) W I P	2000	22	44000	2000	18.80	37600
c) Finished Goods	45000	32	1440000	45000	24.80	223200
II) Debtors	6000	32	192000	12000	24.80	297600
Total Current Assess			**452000**			**488000**
B) : Current Liabilities						
i) Creditors for R M S	4000	12	48000	8000	10.80	86400
ii) Creditors for wages	1000	10	10000	2000	8.00	16000
iii) Creditors for O.H Exp	1000	10	10000	2000	6.00	12000
			68000			**114400**
C) : Net Working Cap			384000			573600

PROBLEM NO: 11

Effect of Alternative Working Capital Policies

Working Capital Policy	Conservative (Rs)	Moderate (Rs)	Aggressive (Rs)
Sales	20,00,000	20,00,000	20,00,000
Earnings before Interest and Taxes (EBIT)	2,00,000	2,00,000	2,00,000
Current Assets	5,00,000	4,00,000	3,00,000
Fixed Assets	5,00,000	5,00,000	5,00,000
Total Assets	10,00,000	9,00,000	8,00,000
Return on Total Assets (EBIT÷ Total Assets)	20%	22.22%	25%
Current Assets/Fixed Assets	1.00	0.80	0.60

The aforesaid calculation shows that the conservative policy provides greater liquidity (solvency) to the firm, but lower return on total assets. On the other hand, the aggressive policy gives higher return, but low liquidity and thus is very risky. The moderate policy generates return higher than Conservative policy but lower than aggressive policy. This is less risky than aggressive policy but riskier than conservative policy.

In determining the optimum level of current assets, the firm should balance the profitability – solvency tangle by minimizing total costs – Cost of liquidity and cost of illiquidity.

PROBLEM NO: 12

a) Calculation of Ratio of Current assets to total assess

$$\text{Ratio of Current Assets to Total Assets} = \frac{\text{Total Current Assess}}{\text{Total Assets}} = \frac{8000}{24000}$$

$$= \frac{1}{3} = 1:3$$

b) Calculation of Ratio of Current Liabilities to total Liabilities

$$\text{Ratio of Current Liabilities to Total Liabilities} = \frac{\text{Total Current Liabilities}}{\text{Total Liabilities}} = \frac{2000}{24000}$$

$$= \frac{1}{12} = 1:12$$

c) Calculation of net Profitability

Particulars	Calculation	Amount (Rs.)
A) : Return on Assets		
i) On Current Assets	8000 x 2%	160
ii) On Fixed Assets	16000 x 14%	2240
Total Return		2400
B) : Cost of Liabilities		
i) Of Current Liabilities	2000 x 4%	800
ii) Of Lon – Term Liabilities	22000 x 10%	2200
Total cost of Liabilities		2280
C) Net profitability (A-B)		120

PROBLEM NO: 13

Method-I:

Given information = 300lakhs

According to tandon committee maximum permissible bank finance is as follows

@75%(C.A-C.L) = 75%(850-300)

Core current assets = 412.5

NET MPBF = MPBF-existing loan

= 412.5-300

= 112.5

METHOD-II:

MPBF = 75%(C.A)-C.L

= 75%(850)-300

= 337.5

NET MPBF = MPBF-existing loan

= 337.5-300

= 37.5

METHOD-III:

MPBF = 75%(C.A-CORE C.A)-C.L

= 75%(850-300)-300

= 112.5

NET MPBF = MPBF- existing loan

= 112.5-300

= (187.5)

(NO MPBF APPLICABLE TO COMPANY)

PROBLEM NO: 14

Method – I

MPBF = 0.75 (CA - CL)

= 0.75 (360 - 120)

= 0.75 (240)

= 180

Balance permissible = 180 – 180

= NIL

Method – II

MPBF = .75 (CA) – CL

= 0.75 (360) – 120

= 270 – 120

= 150

Balance = 150 – 180

= (30L)

Method – III

MPBF = 0.75 (CA -CCA) – CL

= 0.75 (360 - 180) – 120L

= 0.75 (180) – 120L

A = 135 – 120

= 15L

Balance Perm = 15L – 180L

= (165L)

PROBLEM NO: 15

Given,

Period covered = 365days

1) RMHP $= \frac{\text{Avg stock of R.M}}{\text{RMCDY}} \times 365$

$= \frac{320}{4400} \times 365$

= 27days

2) WIPHP $= \frac{\text{Avg stock of W.I.P}}{\text{Cash cost of production}} \times 365$

$= \frac{350}{10000} \times 365$

= 13days

3) FGHP $= \frac{\text{Avg finished goods}}{\text{cost of goods sold}} \times 365$

$= \frac{260}{10500} \times 365$

= 9days

4) Receivable conversion period $= \frac{\text{Debtors}}{\text{credit sales}} \times 365$

$= \frac{480}{16000} \times 365$

= 11days

5) D.P = 16DAYS

6) N.O.C.P. = ICP + RCP - DP

= RMHP + WIPHP + FGHP + RCP - DP

= 27 + 13 + 9 + 11 - 16

= 44days

$\text{Cash cycle} = \frac{365}{\text{NOCP}} = \frac{365}{44} = 8.29(\text{or})8\text{days}$

PROBLEM NO: 16

Calculation of Net operating cycle period for year 1 & year 2

Particulars	Year 1 Calculation	No of days	Year 2 Calculation	No of days
i) RMCP	$\frac{20000}{96000} \times 360$	75	$\frac{27000}{135000} \times 360$	72
ii) WIPCP	$\frac{14000}{140000} \times 360$	36	$\frac{18000}{180000} \times 360$	36
iii) FGCP	$\frac{21000}{140000} \times 360$	54	$\frac{24000}{180000} \times 360$	48s
iv) DCP	$\frac{32000}{160000} \times 360$	72	$\frac{50000}{200000} \times 360$	90

Gross Op Cp		237		246
Less: CPP	$\frac{16000}{96000} \times 360$	(60)	$\frac{18000}{135000} \times 360$	(48)
Net operating C.P		177		198

Comment: In year 2 NOCP increased by 22 days because of increase in DCP and reduction in CPP.

PROBLEM NO: 17

Step:1 Rough cost sheet

Particulars	Amount (Rs.)
Opening Raw materials	10000
Add: Purchases	35000
Less: Closing stock	(11000)
Raw materials consumed	34000
Add: wages & man. Exp	15000
Gross works cost	49000
Add: opening stock of W.I.P	30000
Less: Closing stock of W.I.P	(30500)
Net Works cost	48500
Add: Administrative OHS	15000
Cost of production	63500
Add: opening F.GS	5000
Less: closing F.GS	(8500)
Cost of Goods Sold	60000
Add: Selling Dist Exp	10000
Cost of Sales	70000
Add: Profits	30000
Sales	100000

Step: 2 Calculation of Net operating Cycle period

Particulars	Calculation	No of day
i) RMCP	$\frac{(10000+11000)/2}{34000} \times 365$	112.72
ii) WIPCP	$\frac{(30000+30500)/2}{63500} \times 365$	173.87
iii) FGCP	$\frac{(5000+8500)/2}{60000} \times 365$	41.06
iv) DCP	$\frac{(6500+30000)/2}{100000} \times 365$	66.61
Groos operating cycle period		
v) Less CPP	$\frac{(5000+10000)/2}{35000} \times 365$	78.20
Net operating cycle period		316.06 days

Step: 3 Calculation of W Cap requirement

Particulars	Amount (Rs.)
A. : Current Assets	
i) Raw material	11000
ii) Work in progress	30500
iii) Finished Goods	8500
iv) Debtors	30000

v) Cash & Bank	20000
Total Current Assets (A)	100000
B. : Current Liabilities	
Creditors	10000
Total Current Liabilities (B)	10000
C. : Net working capital (A-B)	90000

PROBLEM NO: 18

Computation of Operating Cycle:

1) Raw Material Storage Period (R):

$$\text{Raw material storage period} = \frac{\text{Avg stock of raw material}}{\text{Daily avg consumption of R.M.}}.$$

$$= \frac{(180000+200000)/2}{1080000/360} = 63.33\text{DAYS}$$

Raw Material Consumed = Opening Stock + Purchases – Closing Stock

= Rs 1,80,000 + Rs 11,00,000 – Rs 2,00,000 = Rs 10,80,000

2) Conversion/Work-in-Process Period (W)

$$\text{Conversion/processing period} = \frac{\text{Avg stock of WIP}}{\text{Daily avg production cost}}$$

$$= \frac{(60000+100000)/2}{1540000/360} = 18.7\text{days}$$

Production Cost:	**Rs**
Opening Stock of WIP	60,000
Add: Raw Material Consumed	= 10,80,000
Add: Wages	= 3,00,000
Add: Production Expenses	= 2,00,000
	16,40,000
Less: Closing Stock of WIP	= 1,00,000
Production Cost	15,40,000

3) Finished Goods Storage Period (F)

$$\text{Finished goods storage period} = \frac{\text{Avg stock of F.G.}}{\text{Daily avg C.O.G.S}}$$

$$= \frac{(260000+300000)/2}{1500000/360} = 67.2\text{Days}$$

Cost of Goods Sold	**Rs**
Opening Stock of Finished Goods	2,60,000
Add: Production Cost	15,40,000
	18,00,000
Less: Closing Stock of Finished Goods	3,00,000

15,00,000

4) Debtors Collection Period (D)

$$\text{Debtors collection period} = \frac{\text{avg debtors}}{\text{Daily avg sales}} = \frac{(150000+200000)/2}{2000000/360} = 31.5\text{days}$$

5) Creditors Payment Period (C)

$$\text{Creditors payment periiod} = \frac{\text{Avg creditors}}{\text{Daily avg purchase}}$$

$$= \frac{(200000+240000)/2}{1100000/360} = 72\text{Days}$$

6) Duration of Operating Cycle (O)

O = R + W + F + D – C

= 63.33 + 18.7 + 67.2 + 31.5 – 72

= 108.73 days

Computation of Working Capital

i) Number of Operating Cycles per Year

= 360/Duration Operating Cycle = 360/108.73 = 3.311

ii)

Total Operating Expenses	**Rs**
Total Cost of Production	15,00,000
Add: Administration Expenses	1,75,000
Selling Expenses	75,000
	17,50,000

iii) Working Capital Required

$$\text{Working capital required} = \frac{\text{Total operating expenses}}{\text{Number of operating cycles per year}} = \frac{1750000}{3.311}$$

= Rs.528541

[**Note**: For computational purposes, the above solution is based on 360 days a year. The solution can also be solved on the basis of 365 days a year. Work-in-process (W) can be computed alternatively taking Administration Expenses as part of Cost of Production. This would lead to further changes in figures of Finished Goods Storage Period, Duration of operating cycle, Number of operating cycles per year and amount of capital required.]

PROBLEM NO: 19

From she given information

Cash Turnover rate = 4.5

Annual Cash outflow = 175000

i) No. of cycles in a year = $\frac{365}{4.5}$ = 6 cycles

ii) Cash outflow per day = $\frac{175000}{365}$

iii) Cash outflow per cycle = $\frac{175000}{6}$ = 29167

iv) Amount saved of accounts payable can be stretched by 20days $= \frac{175000}{365} \times 20$

$= 9589$

v) Savings in cost $= 9589 \times 8\%$

$= 767$

PROBLEM NO: 20

Step:1 Calculation of PAT

Particulars	Amount (Rs.)
Incremental Sales	120000
Less: In cr Cost of sales@85%	(102000)
	18000
Less: Bad debts @10%	12000
PBT	6000
Less: Tax@30%	1800
PAT	4200 A

Step: 2 Calculation of opportunity cost

$$\frac{120000}{12} \times 1.5 \times 85\% \times 40 = 5100\,B$$

Step: 3 Incremental Net benefit

Increment net benefit/Loss = A-B = 4200 – 5100

Loss = 900

Step: 4 Decision making

Since the estimated profit after tax an additional sales Rs. 4200 is less than the required return on additional investment of Rs. 5100 in receivables, hence the offer should not be accepted.

PROBLEM NO. 21

Calculation of incremental net profit

Particulars	Proposal A	Proposal B
Sales	1,00,000	2,00,000
Less: Variable Cost @ 50%	50,000	1,00,000
Contribution	50,000	1,00,000
Less: Bad Debts	(1,00,000 x 20%) 20,000	(2,00,000 x 40%) 80,000
Less: Administration Expenses	(1,00,000 x 5%) 5,000	(2,00,000 x 12%) 24,000
Net Profit / (Loss)	**25,000**	**(4,000)**

Conclusion: If proposal A is accepted profits will increase by Rs.25,000 and if proposal B is accepted we incur a loss of Rs.4,000.

PROBLEM NO: 22

a) Evaluation of credit policy company

	Present (1m)	Proposed (2m)	Increment
a) Sales	75,00,000	81,00,000	6,00,000
b) Variable cost	(50,00,000)	(54,00,000)	4,00,000
c) Contribution	25,00,000	27,00,000	2,00,000
d) Fixed cost	6,25,000	6,25,000	-
e) PAT	**18,75,000**	**20,75,000**	**2,00,000**

b) Cost:

Proposed investment on Debtors = $\frac{81,00,000}{12m} \times 2m$ = 13,50,000

Present investment of Debtors = $\frac{75,00,000}{12m} \times 1m$ = 6,25,000

c) Additional investment = 13,50,000 – 6,25,000 = 7,25,000

Net benefit = 2,00,000 – 77,333 = 1,22,667

Conclusion: it is advisable to extend the credit period from 1 month to 2 months , since net benefit is positive.

PROBLEM NO: 23

Calculation Additional Contribution

Proposed Sales $\frac{25L}{2m}$ x 12m	15L
Present Sales $\frac{10L}{1m}$ x 12m	120L
Additional Sales	30L
Contribution Ratio	40%
∴ Additional contribution (30L x 40%)	12L

PROBLEM NO: 24

Receivable turnover = 360 / 75 = 4.8

PARTICULARS	Rs
1) Additional sales = 6 crores x 15%	90,00,000
2) Profitability of additional sales = Rs.90,00,000 x 0.2	18,00,000
3) Additional receivables associated with the new sales = Rs.90,00,000/4.8	18,75,000
4) Additional investment in receivables associated with the new sales = Rs 18,75,000 x 0.8	15,00,000
5) New level of receivables associated with the original sales = Rs.6,00,00,000/4.8	1,25,00,000
6) Old level of receivables associated with the original sales = Rs.6,00,00,00/8	75,00,000
7) Incremental receivable investment, original sales (New level - old level)	50,00,000
8) Incremental Investment = Rs 50,00,000 x 0.8	40,00,000
9) Total increase in receivable investment = Rs 15,00,000 + Rs 40,00,000	55,00,000
10) Carrying cost of additional investment = 0.20 x Rs.55,00,000	11,00,000

Advise: As the incremental carrying cost is less than the incremental profitability, the company should lengthen its credit period from 30 to 60 days.

PROBLEM NO: 25

Evaluation of Alternative Collection Programmes

	Present Policy	Alternative I	Alternative II
	Rs.	Rs.	Rs.
Sales Revenues	30,00,000	30,00,000	30,00,000
Average Collection Period (ACP) (days)	50	40	30

Receivables Rs. $\left(\text{Sales} \times \frac{\text{ACP}}{360}\right)$	4,16,667	3,33,333	2,50,000
Reduction in Receivables from Present Level (Rs)	–	83,334	1,66,667
Savings in Interest @ 10% p.a. **(A)**	–	RS 8,333	RS 16,667
% of Bad Debt Loss	5%	4%	3%
Amount (Rs)	1,50,000	1,20,000	90,000
Reduction in Bad Debts from Present Level **(B)**	–	30,000	60,000
Incremental Benefits from Present Level **(C) = (A) + (B)**	–	38,333	76,667
Collection Expenses (Rs)	30,000	60,000	95,000
Incremental Collection Expenses from Present Level **(D)**	–	30,000	65,000
Incremental Net Benefit (C – D)	**–**	**RS 8,333**	**RS 11,667**

Conclusion: From the analysis it is apparent that Alternative I has a benefit of RS 8,333 and Alternative II has a benefit of RS 11,667 over present level. Alternative II has a benefit of Rs 3,334 more than Alternative I. Hence Alternative II is more viable.

(**Note:** In absence of Cost of Sales, sales has been taken for purpose of calculating investment in receivables. 1 year = 360 days.)

PROBLEM NO: 26

Evaluation of the Different Options in Credit Policy of JKL Ltd

(Rs. 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 level	–	4	8	20 (A)
Debtors	$\frac{1\times 200}{12} - 16.67$	$\frac{1.5\times 210}{12} - 26.65$	$\frac{2\times 220}{12} - 36.67$	$\frac{3\times 250}{12} - 62.50$
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(D)
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: 27

Statement showing the Evaluation of Debtors Policies

	Particulars	Present Policy	Proposed Policy I	Proposed Policy II
		(Rs)	(Rs)	(Rs)
A	**Expected Profit:**			
	(a) Credit Sales	50,00, 000	60,00,000	67,50,000
	(b) Total Cost other than Bad Debts:			
	(i) Variable Costs	35,00,000	42,00,000	47,25,000
	(c) Bad Debts	1,50,000	3,00,000	4,50,000
	(d) Expected Profit [(a) – (b) – (c)]	13,50,000	15,00,000	15,75,000
B	**Opportunity Cost of Investments in Receivables**	2,18,750	3,50,000	4,92,188
C	**Net Benefits (A – B)**	11,31,250	11,50,000	10,82,812

Recommendation: The Proposed Policy I should be adopted since the net benefits under this policy are higher as compared to other policies.

Working Note: Calculation of Opportunity Cost of Average Investments

$$\text{opportunity cost} = \text{Total cost} \times \frac{\text{collection period}}{12} \times \frac{\text{Rate of return}}{100}$$

Present Policy = Rs 35,00,000 x 3/12 x 25% = Rs 2,18,750

Proposed Policy I = Rs 42,00,000 x 4/12 x 25% = Rs 3,50,000

Proposed Policy II = Rs 47,25,000 x 5/12 x 25% = Rs 4,92,188

PROBLEM NO: 28

Step: 1 Calculation of Incr PBT

Particulars	Option-I	Option-II
Incremental Sales	450000	900000
Less" Increm. V. cost	(300000)	(600000)
Incr. Contribution	150000	300000
Less: Incr. F cost	Nill	(50000)
Less: Incr. Bad debts	73500	(165000)
	(103500-30000)	(195000-30000)
Incr. PBT	76500	85000

Step: 2 Calculation of opportunity cost

Particulars	Option-I	Option-II
Proposed Invest in Debtors	$\frac{(3450000)}{12} \times 2 \times \frac{2}{3}$ 383333	$\frac{3900000}{12} \times 3 \times \frac{2}{3}$
Existing Invest in Debtors	$\frac{3000000}{12} \times 1 \times \frac{2}{3}$ (166667)	$\frac{3000000}{12} \times 1 \times \frac{2}{3}$ (166667)
Addition Invest in Debtors	216667	483333
OPP COC	20%	20%
OPP Cost	43333	96667

Step: 3 Incremental net benefit

Particulars	Option – I	Option – II

Incr. PBT	76500	85000
Opp Cost	43333	96667
Incr Net benefit	33167	(11667)

Conclusion: Sanachandini Limited should adopt the 2 months credit policy as it yields higher return.

PROBLEM NO: 29

Since the amount of revenue generated from each category of customer is not given in the question. Let us consider Rs.100 as the amount of revenue generated from each type of customer. Therefore, Rs.100 shall be taken as the basis for reappraisal of Company's credit policy.

Statement showing the Evaluation of credit Policy

	Particulars	Classification of Customers			
		1	2	3	4
A	. Expected Profit:				
	a) Revenue	100	100	100	100
	b) Total Cost other than Bad Debt:				
	i) Cost of Goods Sold	85	85	85	85
	ii) Fixed Cost	5	5	5	5
		90	90	90	90
	c) Bad Debt	0	3.00	10.00	20.00
	d) Expected Profit [(a)-(b)-(c)]	10	8.00	0	(10.00)
B	. Opportunity Cost of Investment in Receivables	1.66	1.55	1.48	2.96
C.	Net Benefits [A-B]	8.34	6.45	(1.48)	(12.96)

Recommendation: The reappraisal of company's credit policy indicates that the company either follows a lenient credit policy or it is inefficient in collection of debts. Even though the company sells its products on terms of net 30 days, it allows average collection period for more than 30 to all categories of its customers.

The company can continue with customers covered in categories 1 and 2 since net benefits are favourable. The company either should not continue with customer covered in categories 3 and 4 or should reduce the bad debt % by at least 1.48% and 12.96% respectively since net benefits are unfavourable to the extent of 1.48% and 12.96% of sales respectively. The other factors to be taken into consideration before changing the present policy includes (i) past performance of the customers and (ii) their credit worthiness.

Working Note: Calculation of Opportunity Cost:

$$\text{Opportunity cost} = \text{Total cost} \times \frac{\text{average collection period}}{365} \times \text{Rate of interest}$$

$$\text{For category 1} \quad = RS.90 \times \frac{45}{365} \times \frac{15}{100} - RS.1.66$$

$$\text{For category 2} \quad = RS.90 \times \frac{42}{365} \times \frac{15}{100} - RS.1.55$$

$$\text{For category 3} \quad = RS.90 \times \frac{40}{365} \times \frac{15}{100} - RS.1.48$$

$$\text{For category 4} \quad = RS.90 \times \frac{80}{365} \times \frac{15}{100} - RS.2.96$$

PROBLEM NO: 30

Evaluation of the given proposal of cash discount

Particulars	Amount
A. Cost	
Cash discount (25 L x 60 x5%)	75,000
B. Benefit	
a) Reduction in interest in debtors $\left(\frac{25L}{12m} \times 2m \times 60\%\right) \times \frac{9}{10}$ = 2,25,000	
b) Savings there on @ 35% (2,25,000 x 35%)	78,750
Net Benefit (A - B)	**3,750**

Conclusion: Since benefit is more than cost it is beneficial for the company to accept the proposal.

Note: Debtors have been valued at average cost of Rs.9 per unit. Alternatively they can be valued at full value of Rs.10 per unit.

PROBLEM NO: 31

Evaluation of factoring service

Particulars	Amount (Rs.)
A) Benefit	
a) savings on bad debts (100L*0.5%)	50,000
b) savings on administrative cost	1,00,000
c) opportunity cost of saving	
i) present investment on debtors $\frac{100}{365} \times 80 = 21.91L$	
ii) proposed investment on debtors $\frac{100}{365} \times 60 = 16.43L$	
Opportunity cost (i-ii) = 5.48L	
$\therefore$ oppourtunity cost $= 5.48L \times 80\% \times 15\%$	65760
TOTAL	2,15,760
B) Cost	
a) factoring charges (100L*2%)	2,00,000
TOTAL	2,00,000

C) NET BENEFIT = (A-B) 15,760

Conclusion: it is advisable to enter into a factoring agreement, since net benefit is positive.

PROBLEM NO: 32

Average level of Receivables	= 3,20,00,000 × 90/360	80,00,000
Factoring commission	= 80,00,000 × 2/100	1,60,000
Factoring reserve	= 80,00,000 × 10/100	8,00,000
Amount available for advance	= Rs 80,00,000-(1,60,000+8,00,000)	70,40,000

Factor will deduct his interest @ 18% :-

$$\text{INTEREST} = \frac{RS.70,40,000 \times 18 \times 90}{100 \times 360} \qquad = \text{Rs } 3,16,800$$

Advance to be paid = Rs 70,40,000 – Rs 3,16,800 = Rs 67,23,200

Annual Cost of Factoring to the Firm:	**Rs**
Factoring commission (Rs 1,60,000 × 360/90)	6,40,000
Interest charges (Rs 3,16,800 × 360/90)	12,67,200
Total	19,07,200
Firm's Savings on taking Factoring Service:	**Rs**
Cost of credit administration saved	5,00,000
Cost of Bad Debts (Rs 3,20,00,000 x 1.5/100) avoided	4,80,000
Total	9,80,000
Net Cost to the firm (Rs 19,07,200 – Rs 9,80,000)	9,27,200
Effective rate of int to the firm $= \frac{RS.9,27,200 \times 100}{67,23,200}$	13.79%*

(Note: The number of days in a year has been assumed to be 360 days.)

PROBLEM NO: 33

Computation of Effective cost of Factoring

Average level of Receivables = 1200000 x $\frac{90}{360}$ = 300000

Factoring commission = 300000 x $\frac{2}{100}$ = 6000

Factoring Reserve = 300000 x $\frac{10}{100}$ = 30000

Amount available for advance = [300000 – (6000 + 30000)] = 264000

Factor will deduct his int @ 16%

Interest = $\frac{264000 \times 16 \times 90}{360 \times 100} = Rs.10560$

Advance to he paid = 264000 – 10560 = 253440

Annual cost of Featuring to the firm:

Factoring commission (6000 x $\frac{360}{90}$)	24000
Interest Charges (10560 x $\frac{360}{90}$)	42240
Total	66240

Firms savings on taking Factoring services:

Cost of Administration Saved	50000
Cost of bad debts (12L x 15%) (Avoided)	18000
Total	68000
Net benefit to the firm (68000 - 66240)	**1760**

Effective cost of factoring = $\frac{66240}{253440} \times 100$ = 26.136%

Effective Cost of Factoring = 26.136%

PROBLEM NO: 34

Preparation of cash budget for the month of April, May and June:-

Particulars	April	May	June
Opening cash balance	**6000**	**3950**	**3000**
1. RECIEPTS:			
i) cash sales	1600	1700	1800
ii) collections from debtors (W.N.-1)	13050	13950	14850
iii) advance			9000
iv) dividend			1000
TOTAL	**14650**	**15650**	**26650**
2. PAYMENTS:			
i) Materials	9600	9000	9200
ii) Wages (W.N.-2)	3150	3500	3900
iii) Overheads (W.N.-3)	1950	2100	2250
iv) installment	2000	2000	2000
v) dividends			10000
vi) income tax			2000
TOTAL	**16700**	**16600**	**29350**
3.CLOSING BALANCE(A+B+C)	**3950**	**3000**	**300**

WORKING NOTE-1:-

Collection from debtors

Month	April	May	June
February	6300		
March	6750	6750	
April		7200	7200
May			7650
June			
TOTAL	**13050**	**13950**	**14850**

Wages

Particulars	April	May	June
March	750		
April	2400	800	
May		2700	900
june			3000
TOTAL	**3150**	**3500**	**3900**

Overheads

Particulars	April	May	June
March	950		
April	1000	1000	
May		1100	1100
june			1150
TOTAL	**1950**	**2100**	**2250**

PROBLEM NO: 35

Cash budget for the period July to Dec. 2001 (Rs. In lakhs)

Particulars	July	Aug.	Sep.	Oct.	Nov.	Dec.
I. Opening balance (A)	5	7	7	7	7	7
II. **Receipts/Collections** Sales **(W.N - 1)**	38	40	46	50	56	63

Interest received	-	-	2	-	-	2
Sale of fixed assets	-	20	-	-	-	-
Loan from bank	-	-	-	-	-	-
(B)	38	60	48	50	56	65
III. Payments/ Disbursements						
Purchases	14	16	17	20	20	25
Expenses	5	6	6	6	7	7
Wages and Salaries	13 (14×1/2 +12×1/2)	14 (14×1/2 +14×1/2)	16 (14×1/2 +18×1/2)	18 (18×1/2 +18×1/2)	19 (18×1/2 +20×1/2)	21 (20×1/2 +22×1/2)
Investment in Govt. securities	4	24	9	6	10	12
(C)	36	60	48	50	56	65
Closing Balance (A+B+C)	**7**	**7**	**7**	**7**	**7**	**7**

W.N-1: **Sales**

Particulars	July	Aug.	Sep.	Oct.	Nov.	Dec.
June month Sales	14(35X40%)	-	-	-	-	-
July month Sales	24 (40X60%)	16 (40X40%)	-	-	-	-
Aug. month Sales	-	24	16	-	-	-
Sep month Sales	-	-	30	20	-	-
Oct. month Sales	-	-	-	30	20	-
Nov. month Sales	-	-	-	-	36	24
Dec. month Sales	-	-	-	-	-	39
	38	**40**	**46**	**50**	**56**	**63**

PROBLEM NO: 36

Cash budget of XYZ Ltd. for period Apr. – Sep. 2000

Particulars	April	May	June	July	August	Sep.
I) Opening cash balance (A)	4,00,000	9,07,000	10,34,000	6,51,000	5,28,000	7,50,000
II) Collections / receipts						
Sales (W.N-1) (B)	12,75,000	9,35,000	8,15,000	8,85,000	10,30,000	9,80,000
III) Payments/disbursements						
Purchases	6,40,000	6,40,000	9,60,000	8,00,000	6,40,000	9,60,000
Wages	1,20,000	1,60,000	2,00,000	2,00,000	1,60,000	1,40,000
Interest	-	-	30,000	-	-	30,000
Rent	8,000	8,000	8,000	8,000	8,000	8,000
Capital Expenditure	-	-	-	-	-	1,20,000
(C)	7,68,000	8,08,000	11,98,000	10,08,000	8,08,000	12,58,000
Closing balance (A+B-C)	**9,07,000**	**10,34,000**	**6,51,000**	**5,28,000**	**7,50,000**	**4,72,000**

W.N-1: **Calculation of Sales**

Particulars	Apr.	May	June	July	Aug.	Sep.
Jan. Sales	(9LX10%)					
Feb. Sales	90,000	1,05,000				
Mar. Sales	3,15,000	3,60,000	1,20,000			
Apr. Sales	7,20,000	2,70,000	1,35,000	45,000		
May Sales	1,50,000	2,00,000	3,60,000	1,80,000	60,000	
June Sales			2,00,000	3,60,000	1,80,000	60,000
July Sales				3,00,000	5,40,000	2,70,000
Aug. Sales					2,50,000	4,50,000
Sep. Sales						2,00,000
	12,75,000	**9,35,000**	**8,15,000**	**8,85,000**	**10,30,000**	**9,80,000**

PROBLEM NO: 37

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
	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
S×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
	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Materials (Q×5)	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
	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Var. overhead (Q×2)	2,000	2,500	3,000	4,000	3,800			
Var. overhead (Q×2.50)						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
	RS	RS	RS	RS	RS	RS	RS
Wages (Q × 4)	5,000	6,000	8,000				
Wages (Q × 4.50)				8550	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 Rs	Feb Rs	Mar Rs	Apr Rs	May Rs	Jun Rs
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: 38

Workings:	Rs in '000'		
1) Payments to creditors:	Jan. 2014	Feb.2014	March, 2014
Cost of Sales	1,635	1,405	1,330
Add Closing Stocks	1,200	1,100	1,000
	2,835	2,505	2,330
Less: Opening Stocks	1,300	1,200	1,100
Purchases	1,535	1,305	1,230
Add: Trade Creditors, Opening balance	2,110	2,000	1,950
	3,645	3,305	3,180
Less: Trade Creditors, closing balance	2,000	1,950	1,900
Payment	1,645	1,355	1,280
2) Receipts from debtors:			
Debtors, Opening balances	2,570	2,600	2,500
Add: Sales	2,100	1,800	1,700
	4,670	4,400	4,200
Less: Debtors, closing balance	2,600	2,500	2,350
Receipt	2,070	1,900	1,850

CASH BUDGET

a) 3 months ending 31st March, 2014

	(Rs, in 000's)		
	January, 2014	**Feb. 2014**	**March, 2014**
Opening cash balances	545	315	65
Add: Receipts:			
From Debtors	2,070	1,900	1,850
Sale of Investments	---	700	----
Sale of Plant	---	---	50
Total (A)	2,615	2,915	1,965
Deduct: Payments			
Creditors	1,645	1,355	1,280
Expenses	255	210	195
Capital Expenditure	---	800	---
Payment of dividend	---	485	---
Purchase of investments	400	---	200
Total payments (B)	2,300	2,850	1,675
Closing cash balance (A - B)	315	65	290

b) Statement of Sources and uses of Funds for the Three Month Period Ending 31st March, 2014

Sources:	**Rs '000**	**Rs '000**
Funds from operation:		
Net profit	390	
Add: Depreciation	180	570
Sale of plant		50
		620
Decrease in Working Capital		665
Total		1,285
Uses:		
Purchase of plant		800
Payment by dividends		485
Total		1,285

Statement of Changes in Working Capital

	January,14	March, 14	Increase	Decrease
	Rs 000	Rs 000	Rs 000	Rs 000
Current Assets:				
Cash in hand and at Bank	545	290		255
Short term Investments	300	200		100
Debtors	2,570	2,350		220
Stock	1,300	1,000		300
	4,715	3,840		
Current Liabilities:				
Trade Creditors	2,110	1,900	210	---
Other Creditors	200	200	---	---
Tax Due	320	320	---	---
	2,630	2,420		
Working Capital	2,085	1,420		
Decrease		665	665	
	2,085	**2,085**	**875**	**875**

PROBLEM NO: 39

Projected Profit and Loss Account for the year 3

	Year 2 Actual (Rs in lakhs)	Year 3 Projected (Rs in lakhs)		Year 2 Actual (Rs in lakhs)	Year 3 Projected (Rs in lakhs)
To Materials consumed	350	420	By Sales	1,000	1,200
To Stores	120	144	By Misc. Income	10	10
To Mfg. Expenses	160	192			
To Other expenses	100	150			
To Depreciation	100	100			
To Net profit	180	204			
	1,010	**1,210**		**1,010**	**1,210**

Cash Flow:

	(RS in lakhs)
Profit	204
Add: Depreciation	100
	304
Less: Cash required for increase in stock	50
Net cash inflow	254

Available for servicing the loan: 75% of RS 2,54,00,000 or RS 1,90,50,000

Working Notes:

i) Material consumed in year 2: 35% of sales.

$$\text{Likely consumption in year 3}: \text{RS.}1200 \times \frac{35}{100} (\text{OR}) \text{RS.}420(\text{LAKHS})$$

ii) Stores are 12% of sales, as in year 2.

iii) Manufacturing expenses are 16% of sales.

Note: The above also shows how a projected profit and loss account is prepared.

PROBLEM NO: 40

a) Given information, Total cash required during the year (F) = 10,00,000

Transaction cost (T) = 100

Rate of interest (r) = 10% = 0.1

$$\text{Economic lot size (C)} = \sqrt{\frac{2FT}{r}} = \sqrt{\frac{2 \times 10L \times 100}{0.1}} = 44721$$

b) Cash cycle in days $= \frac{44721}{10L} \times 365 =$ 16 days (approx)

c) Average Cash balance $= \frac{0 + 44721}{2} =$ Rs.22361

PROBLEM NO: 41

a) Given information, Total cash required during the year (F) = 37,50,000

Transaction cost (T) = 25

Rate of interest (r) = 0.12

$$\text{Economic lot size (C)} = \sqrt{\frac{2FT}{r}} = \sqrt{\frac{2 \times 37,50,000 \times 40}{0.12}} = \text{Rs.}50,000$$

b) No.of Transactions $= \frac{\text{Annual Cash Requirement}}{\text{Economic Lot Size}} = \frac{37,50,000}{50,000} =$ 75 Transactions

c) Average Cash balance $= \frac{0 + 50,000}{2} =$ Rs.25,000

Holding cost = 25,000 x 12% = Rs.3,000

Total Transaction Cost = 75 x 40 = Rs.3,000

PROBLEM NO: 42

Determination of Optimal Cash Balance according to William J. Baumol Model

The formula for determining optimum cash balance is:

$$C = \sqrt{\frac{2U \times P}{S}}$$

$$C = \sqrt{\frac{2 \times 2,62,500 \times 12 \times 25}{0.075}}$$

$$= \sqrt{\frac{15,75,00,000}{0.075}}$$

$$= \sqrt{2,10,00,00,000}$$

Optimum cash balance, C, =RS.45,826

PROBLEM NO: 43

Given information

Transaction cost per conversion (T) = Rs.10

Variance of daily cash balance (V) = $(200)^2$ = 40,000

Lower Limit (L) = Rs.100

Rate of interest per day (i) = $\frac{0.01(1\%)}{30}$ = 0.00033

Step 1: Calculation of Z

$$Z = \sqrt[3]{\frac{3TV}{4i}} = \sqrt[3]{\frac{3\times10\times40{,}000}{4\times0.00033}} = \sqrt[3]{909090909} = 970.13$$

Step 2: Return level R = L+Z = 970.13 +100 = 1070.13

Step 3: Upper limit H = 3Z + L = 3(970.13) + 100 = 3010.39

Spread = H-L = 3010.39 - 100 = 2910.39

Average Cash Balance = $\frac{4R-L}{3} = \frac{4(1070.13)-100}{3}$ = 1393.5

PROBLEM NO: 44

PART-A:-Evaluation of lock box system reduction of float by 3 days

A. **BENEFIT:**

a) Daily credit sales 365 / 365 = 1,00,000

b) Reduction in float 3 days

c) opportunity cost

(1,00,000*3*15%) 45,000

B. **COST:**

Lock box system fee/charge (50000)

C. **NET LOSS** **(5000)**

PART-B: Evaluation of lock box system reduction of float by 5 days

A. **BENEFIT:**

a) Reduction on float = 5days

b) collection for day = 1,00,000

c) opportunity cost 75000

(5,00,000*15%)

B. **COST:**

a) Lock box cost (50000)

C. **NET BENEFIT** **25000**

Observation:

If lock box system reduced float by 3 days ,it is not advisable to take service whereas reduced flaot by 5 days ,then it is advisable to take service.

PROBLEM NO: 45

Given Information:

Daily Average Collection = Rs.7,00,000

Reduction in float = Rs.3,50,000

Opportunity cost of capital = 8%

a) Average collection per day = 7,00,000

Reduction in float = 3.5 days

Reduction in minimum cash balance = 7,00,000 X 3.5 = Rs.24,50,000

b) Worth of the proposed system = Savings in interest = 24,50,000 X 8% = Rs.1,96,000

c) Maximum monthly charge that Jaswanth can pay = $\frac{1,96,000}{12}$ = Rs.16,333

PROBLEM NO: 46

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.

PROBLEM NO. 47

PART-A:

Given contract = 3/20 net 40

$$\text{Annualised cash discount} = \frac{d}{1-d} \times \frac{365}{n-p}$$

$$\text{Annualised cash discount} = \frac{3}{97} \times \frac{365}{40-20} \times 100$$

= 56.44%

PART-B:

Given contract = 3/20 net 50

$$\text{Annualised cash discount} = \frac{3}{97} \times \frac{365}{50-20} \times 100 = 37.63\%$$