6. WORKING CAPITAL MANAGEMENT

ASSIGNMENT SOLUTIONS

PROBLEM NO:1

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

WORKING NOTE-1:

Cost structure of Dowell Co. Ltd

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 = $\frac{\text{Raw Material Consumption during Year}}{12m} \times$ R..M.H.P

$= \frac{60{,}000 \times Rs.3}{12m} \times 2m = 30{,}000$

Step-2: W.I.P inventory

Particulars	Computation		Amount (Rs.)
Raw material	$\frac{\text{Raw Material Consumption during Year}}{12m} \times$ W.I..P.H.P	$\frac{60{,}000 \times Rs.3}{12m} \times 1m$	15,000
Wages	$\frac{60{,}000 \times 0.50}{12\ m} \times 1m \times 50\%$		1,250
Overheads	$\frac{60{,}000 \times 1}{12m} \times 1m \times 50\%$		2,500
			Rs.18,750

Step-3: Finished goods Inventory $= \frac{60{,}000 \times 4.50}{12m} \times 3m$

= Rs.67,500

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

= Rs.67,500

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

= Rs. 30,000

Working Capital Statement

Particulars	Amount (Rs.)
A. 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**
B. Current liabilities:	
Creditors (Step-5)	30,000
Total (B)	**30,000**
Net working capital (A - B)	**1,53,750**

PART - B

Estimated profit for the year ended 31.12.00

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
To Raw material a/c	1,80,000	By sales a/c (60,000 ×5)	3,00,000
(60,000 × 3)	30,000		
To Wages a/c	60,000		
(60,000×0.5)	2,500		
To Overhead a/c	27,500		
(60,000 × 1)			
To Interest on debentures a/c (50,000×5%)			
To Net profit			
	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	1,250	Debtors	67,500
	3,08,750		**3,08,750**

PROBLEM NO: 2

Statement of Working Capital Requirement [on cash cost basis]

A. Current Assets	Amount (Rs.)
Debtors: Domestic Sales[1,80,00,000 x 1/12]	15,00,000
Debtors: Export Sales [64,00,000 x 3/12]	16,00,000
Stock of Raw materials [60,00,000 x 1/12]	5,00,000
Stock of Finished Goods [*1,77,00,000 x 1/12]	14,75,000
Cash at Bank and in Hand	10,00,000
Total Current Assets	**60,75,000**
B. Current Liabilities	
Material [60,00,000 x 2/12]	10,00,000
Wages [45,00,000 x 1/12]	3,75,000
Manufacturing expenses [72,00,000 x 1/12]	6,00,000
Administrative expenses [18,00,000 x 1/12]	1,50,000

	Income tax payable	5,00,000
	Total Current Liabilities	**26,25,000**
C.	Net Current Assets (A-B)	34,50,000
D.	Add: 10% Margin for Contingencies	3,45,000
E.	**Required Working Capital [C-D]**	**37,95,000**

Working note:

***Computation of factory cost:**

Particulars	Amount (Rs.)
Material cost	60,00,000
Wages	45,00,000
Manufacturing expenses	72,00,000
Factory cost	1,77,00,000

PROBLEM NO: 3

INVENTORY NORMS:

Particulars	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 (Rs.)
a) Raw Material (Total)	6,75,000
b) Wages	5,40,000
c) Manufacturing Expenses (60000 x 12)	7,20,000
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 Current Assets:

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 consider)

iii) Stock of FG $= \frac{Cash\ Cost\ of\ Production}{12} \times FGHP = \frac{21,15,000}{12} \times 1m = 1,76,250$

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

Calculation of Current Liabilities:

Creditors $= \frac{\text{Credit Purchases}}{12} \times CCP = \frac{6,75,000}{12m} \times 2m = 1,12,500$

Time Lag:

Wages $= \frac{\text{Wages incurred}}{12m} \times 1m = 45,000$

Manufacturing exp. = 60,000(given)

Admin expenses $= \frac{\text{Admin incurred}}{12m} \times 1m = \frac{1,80,000}{12} \times 1m = 15,000$

Statement showing working capital requirement:

Particulars	Amount Rs
A. 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**
B. Current Liabilities	
a) Creditors	1,12,500
b) Wages	45,000
c) Manufacturing expenses	60,000
d) Administrative expenses	15,000
TOTAL (B)	**2,32,500**
Net working capital(A-B)	**5,06,250**
Add: Safety Margin @ 15% (5,06,250 x 15%)	75,938
Total 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 period.

PROBLEM NO.4

Calculation of Net Working Capital requirement:

Particulars	Amount (Rs.)	Amount (Rs.)
A. Current Assets:		
Inventories:		
- Raw material stock (Refer to Working note 2)	10,00,000	
- Work in progress stock (Refer to Working note 1)	15,20,000	
- Finished goods stock (Refer to Working note 3)	23,00,000	
Receivables (Debtors) (Refer to Working note 4)	19,16,667	
Cash and Bank balance	1,00,000	
Gross Working Capital		68,36,667
B. Current Liabilities:		
Creditors for raw materials (Refer to Working note 5)	21,66,667	
Creditors for wages (Refer to Working note 6)	2,37,500	
		24,04,167
Net Working Capital (A - B)		44,32,500

Working Notes:

1. **Work in progress stock**

Particulars	Amount (Rs.)
Raw material requirements (10,000 units × Rs.100)	10,00,000
Direct wages (40% × 10,000 units × Rs. 50)	2,00,000
Overheads (40% × 10,000 units × Rs. 80)	3,20,000
	15,20,000

2. **Raw material stock:** It is given that raw material in stock is average 4 weeks consumption. Since, the company is newly formed, the raw material requirement for production and work in progress will be issued and consumed during the year.

   Hence, the raw material consumption for the year is as follows:

Particulars	Amount (Rs.)
For Finished goods (1,10,000 × Rs. 100)	1,10,00,000
For Work in progress (10,000 × Rs. 100)	10,00,000
	1,20,00,000

   Raw material stock = $\frac{\text{Rs.}1,20,00,000}{12\,\text{months}} \times 1\,\text{month}$ i.e. Rs. 10,00,000

3. **Finished goods stock:** 10,000 units @ Rs. 230 per unit = Rs.23,00,000
4. **Debtors for sale:** 1,00,000 x 230 x 1/12 =
5. **Creditors for raw material:**

Material Consumed (W.N-1)	Rs. 1,20,00,000
Add: Closing stock of raw material	Rs. 10,00,000
	Rs. 1,30,00,000

   Credit allowed by suppliers = $\frac{\text{Rs.}1,30,00,000 \times 2\,\text{months}}{12\,\text{months}}$ = Rs. 21,66,667

6. **Creditors for wages**

Particulars	Amount (Rs.)
Wages cost in Finished goods (1,10,000 × Rs.50)	55,00,000
Wages cost in Work in progress (10,000 × Rs.50 × 40%)	2,00,000
	57,00,000

   Wages payable = 57,00,000 x 0.5/12 = Rs.2,37,500

PROBLEM NO. 5

Statement showing the requirements of working capital (on cash cost basis)

Particulars	Calculation	Amount (Rs.)
A. Current assets:		
a) Stock of raw material	10,33,620 x 2/12	1,72,270
b) Stock of work in progress.	As per working note	1,74,945
c) Stock of finished goods	15,67,550 x 10/100	1,56,750
d) Debtors	13,59,756 x 2/12	2,26,626
e) Advance taxes paid	{(70% of Rs. 1,07,000) × 3/12}	18,725
Total (A)		**7,49,321**
B. Current liabilities		
a) Creditors for raw materials	12,05,890 x 1.5/12	1,50,736
b) Creditors for wages	7,08,875 x 1/12	59,073
c) Creditors for office &administrative expenses	1,49,800 x 1/12	12,483
d) Creditors for selling &distribution expenses	1,39,100 x 1/12	11,592

e) Provision for taxation	1,07,000 x 30/100	32,100
Total (B)		**2,65,984**
Net working capital(a-b)		**4,83,337**
Add: Safety Margin	4,83,337 x 10/100	**48,334**
Total working capital		**5,31,671**

Working notes:

1. Calculation of stock of work in progress	**(Rs.)**
Raw material (Rs. 8,98,800 x 15%)	1,34,820
Wages & Manufacturing expenses (Rs. 6,68,750 x 15% x 40%)	40,125
Total	**1,74,945**

2. Calculation of stock of finished goods and cost of sales	**(Rs.)**
Direct material cost (8,98,800 + 1,34,820)	10,33,620
Wages & Manufacturing expenses (668750+40125)	7,08,875
Gross factory cost	17,42,495
Less: Closing W.I.P (as per working note (1)	(1,74,945)
Cost of goods produced	15,67,550
Less: Closing stock (10% of Rs.1,54,67,550)	(1,56,755)
Cost of goods sold	14,10,795
Add: Office & administrative expenses	1,49,800
Add: Selling &distribution expenses	1,39,100
Total cash cost of sales	**16,99,695**
Total cash cost of credit sales (80% of Rs 16,99,695)	**13,59,756**

3. Calculation of credit purchases:	
a) Raw material consumed (Rs 8,98,800 x 115%)	10,33,620
b) **Add:** Closing stock (10,33,620 x 2/12)	1,72,270
c) **Less:** Opening stock	Nil
Purchases: (a + b - c)	**12,05,890**

PROBLEM NO. 6

i) Javan Limited Projected Statement of Profit / Loss (Ignoring Taxation)

Particulars	Year 1	Year 2
Production (Units)	7,000	8,000
Sales (Units)	6,000	8,500
	(Rs.)	**(Rs.)**
Sales revenue (A) (Sales unit × Rs. 175)	10,50,000	14,87,500
Cost of production:		
Materials cost (Units produced × Rs. 75)	5,25,000	6,00,000
Direct labour and variable expenses (Units produced × Rs. 35)	2,45,000	2,80,000
Fixed manufacturing expenses (Production Capacity: 10,000 units × Rs. 15)	1,50,000	1,50,000
Depreciation (Production Capacity: 10,000 units × Rs. 10)	1,00,000	1,00,000
Fixed administration expenses (Production Capacity: 10,000 units × Rs. 5)	50,000	50,000
Total Costs of Production	10,70,000	11,80,000
Add: Opening stock of finished goods (Year 1: Nil; Year 2: 1000 units)	-	1,52,857
Cost of Goods available for sale (Year 1: 7,000 units; Year 2: 9,000 units)	10,70,000	13,32,857

Less: Closing stock of finished goods at average cost(year 1: 1000 units, year 2: 500 units) (Cost of Production × Closing stock/ units produced)	(1,52,857)	(74,048)
Cost of Goods Sold	9,17,143	12,58,810
Add: Selling expenses - Variable (Sales unit × Rs. 7)	42,000	59,500
Add: Selling expenses - Fixed (10,000× Rs.3)	30,000	30,000
Cost of Sales: (B)	9,89,143	13,48,310
Profit (+) / Loss (-): (A - B)	60,857	1,39,190

ii) Projected Statement of Working Capital Requirement (Cash Cost Basis)

	Year 1 (Rs.)	Year 2 (Rs.)
A. Current Assets		
Inventories:		
- Stock of Raw Material	87,500	1,00,000
- Finished Goods (Refer working note 3)	1,38,571	67,698
Receivables (Debtors) (Refer working note 4)	75,286	1,03,364
Minimum Cash balance	25,000	25,000
Total Current Assets / Gross working capital (A)	3,26,357	2,96,062
B. Current Liabilities		
Creditors for raw material (Refer working note 1)	51042	51042
Creditors for Expenses (Refer working note 2)	43083	47458
Total Current Liabilities	94,125	98,500
Net Working Capital (A - B)	2,32,662	1,97,562

Working Notes:

1. **Calculation of creditors for supply of materials:**

Particulars	Year 1 (Rs.)	Year 2 (Rs.)
Materials consumed during the year	5,25,000	6,00,000
Add: Closing stock (2 month's average consumption)	87,500	1,00,000
	6,12,500	7,00,000
Less: Opening Stock	-	87,500
Purchases during the year	6,12,500	6,12,500
Average purchases per month (Creditors)	51,041.67	51041.67

2. **Creditors for expenses:**

Particulars	Year 1 (Rs.)	Year 2 (Rs.)
Direct labour and variable expenses	2,45,000	2,80,000
Fixed manufacturing expenses	1,50,000	1,50,000
Fixed administration expenses	50,000	50,000
Selling expenses (variable + fixed)	72,000	89,500
Total	5,17,000	5,69,500
Average per month	43083.33	47458.33

3. **Cash Cost of Production:**

	Year 1 (Rs.)	Year 2 (Rs.)
Cost of Production as per projected Statement of P & L	10,70,000	11,80,000
Less: Depreciation	1,00,000	1,00,000
Cash Cost of Production	9,70,000	10,80,000
Add: Opening Stock at Average Cost:	--	1,38,571
Cash Cost of Goods Available for sale	9,70,000	12,18,571
Less: Closing Stock at Average Cost;	(1,38,571)	(67,698)
Cash Cost of Goods Sold	8,31,429	11,50,873

4. **Receivables (Debtors)**

Particulars	Year 1 (Rs.)	Year 2 (Rs.)
Cash Cost of Goods Sold	8,31,429	11,50,873
Add: Variable Expenses @ Rs. 7	42,000	59,500
Add: Total Fixed Selling expenses (10,000 units × Rs.3)	30,000	30,000
Cash Cost of Debtors	9,03,429	12,40,373
Average Debtors	75,286	1,03,364

PROBLEM NO. 7

Working Note:

Single shift: No. of units = Sales Revenue / Selling Price = 8,64,000 / 36 = 24,000

Estimation of cost sheet for single and double shift:

Particulars	Single shift unit cost	24,000 units	Double shift unit cost	48,000 units
a. Raw material	12	2,88,000	10.80	5,18,400
b. Wages fixed @ 40%	4	96,000	2	96,000
Variable @ 60%	6	1,44,000	6	2,88,000
c. Overheads fixed @ 80%	8	1,92,000	4	1,92,000
Variable @ 20%	2	48,000	2	96,000
d. Cost of production	32	7,68,000	24.80	11,90,400
e. Profit	4	96,000	11.20	5,37,600
f. Sales	36	8,64,000	36	17,28,000

Estimation of Working capital for single shift and double shift:

Particulars	Single shift			Double shift		
	No. of units	Cost / unit	Amount	No. of units	Cost / unit	Amount
A. Current assets						
i) Stock of R.M	6,000	12	72,000	12,000	10.80	1,29,600
ii) WIP	2,000	22	44,000	2,000	18.80	36,600
iii) Stock of FG	4,500	32	1,44,000	9,000	24.80	2,23,200
iv) Debtors (cost)	6,000	32	1,92,000	12,000	24.80	2,97,600
TOTAL			4,52,000			6,88,000
B. Current liabilities						
i) Trade Creditors	4,000	12	48,000	8,000	10.80	86,400
ii) Wages	1,000	10	10,000	2,000	8	16,000
iii) OH	1,000	10	10,000	2,000	6	12,000
TOTAL			68,000			1,14,400
Working Capital (A - B)			3,84,000			5,73,600

Therefore, additional working capital = W.C required for double shift - W.C required for single shift

= 5,73,600 – 3,84,000 = 1,89,600

Note: Quantity of material in WIP will not change due to double shift working, since work started in the first shift will be completed in the second shift.

PROBLEM NO. 8

Particulars	Working Capital Investment Policy		
	Conservative	Moderate	Aggressive
1. Current assets	20	14	10
2. Fixed assets	10	10	10
3. Total assets	30	24	20

4. Current liabilities	8	8	8
5. Estimated sales	50	38.5	30
6. Estimated EBIT	7.5	5.775	4.5
7. Current ratio {(1) / (4)}	2.5	1.75	1.25

Computation of following for each policy:

i) Rate of return on total assets (in percentages): [(6)/(3)] × 100	25	24.0625	22.5
ii) Net working capital position: (in crores): [(1) - (4)]	12	6	2
iii) Current assets to fixed assets ratio: [(1) / (2)]	2	1.4	1

iv) 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

Calculation of Net Operating Cycle Period

Particulars			Calculations	No. of days
RMCP	=	$\frac{\text{Avg RM inv.}}{\text{RM cons.}} \times 360$	$\frac{80}{600} \times 360$	48
W.I.PCP	=	$\frac{\text{Avg WIP inv.}}{\text{COP}} \times 360$	$\frac{85}{2,100} \times 360$	15
FGCP	=	$\frac{\text{Avg FG inv}}{\text{COGS}} \times 360$	$\frac{180}{2,100} \times 360$	31
RCP	=	$\frac{\text{Avg. debtors.}}{\text{Cr. Sales}} \times 360$	$\frac{350}{3,000} \times 360$	42
		Total Operating Cycle Period		**136**
Less: DP	=	$\frac{\text{Avg. creditors}}{\text{cr. purchases}} \times 360$	$\frac{90}{600} \times 360$	54
			Net Operating Cycle Period	**82**

No. of Operating Cycles in a year = $\frac{365}{82}$ = 4 cycles (approx.)

Assumptions:

1. Raw Material Purchased = Raw Material Consumption
2. 1 year = 360 days
3. 100% Sales is on credit basis.

The operating cycle period of XYZ Ltd. is less than that of industry average.

a) RMCP of XYZ Ltd. is more than that of industry average. XYZ Ltd has to implement better inventory management techniques to reduce the RMCP.

b) WIPCP of XYZ Ltd. is same as that of industry Average.

c) FGCP of XYZ Ltd. is less than that of industry average; due to this the firm may lose some profitable opportunities.

d) DCP of XYZ Ltd. is less than that of industry average. XYZ Ltd. might be adopting strict collection policies which may affect the future sales.

e) CPP of XYZ Ltd. is more than that of industry average. This may show a negative impact on the credit rating of the organization.

PROBLEM NO: 10

Given information

Cash Turnover rate = 4.5

Annual Cash outflow = 175000

i) Amount saved of accounts payable can be stretched by 20days = $\frac{175000}{360}$ x 20= 9,722

ii) Savings in cost = 9,722 x 8% = 778

PROBLEM NO: 11

Evaluation of credit policy of X ltd (Increasing credit period by 20 days)

Benefit:- **(Rs in Lakhs)**

Particulars	Present credit period (40 Days)	Proposed credit period(60 Days)
Sales	400	520
Variable cost	320	416
Contribution	80	104
Fixed cost	-	-
Bad debts @ 4 %	16	20.8
Bad debts Collection @ 5%	20	26
Profit before tax	44	57.2
Tax @40%	17.6	22.88
I.Profit after tax	**26.4**	**34.32**

Net Benefit (Sales Approach)

Particulars	Present credit period (40 Days)	Proposed credit period(60 Days)
(a). Investment in debt (S.V)	44.44 $(400 * \frac{40}{360})$	86.67 $(520 * \frac{60}{360})$
(II) Opportunity Cost [(a)*25%]	**11.11**	**21.67**
Net Benefit [(I) – (II)]	**15.29**	**12.67**

Net Benefit (Variable Cost Approach)

Particulars	Present credit period (40 Days)	Proposed credit period(60 Days)
(a) Investment in debt (S.V*80%)	35.55	69.33
(II) Opportunity Cost [(a)*25%]	8.89	17.33
Net Benefit [(I) – (II)]	**17.51**	**16.99**

Decision: As the Net Benefit in both the cases is higher when the credit period is 40 days, it is **not** advisable to increase the credit period to 60 days.

PROBLEM NO: 12

Evaluation of the different options in credit policy of JKL Ltd.

Rs. In Lakhs

Particulars	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
Less: Credit administrative cost	(1.20)	(1.30)	(1.50)	(3.00)
Bad Debts	(4)	(5.25)	(6.6)	(12.5)

Cost of investment in debts (W.no)	(3.33)	(5.25)	(7.33)	(12.5)
Net Gain/ Loss	71.47	72.2	72.57	72

Working Note:

Computation of cost of investment in debtors

Particulars	1 Month current position	1.5 months option I	2 months option II	3 months option III
(i) Debtors	1x200/12 = 16.67	1.5 x 210/12 = 26.25	2x220/12 = 36.67	3x250/12 = 62.50
Opportunity Cost (i)x 20%	3.33	5.25	7.33	12.5

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

PROBLEM NO: 13

Statement Showing Evaluation of Credit Policies

Particulars	Present Policy	Proposed Policy
Credit Sales	30,00,000	36,00,000
Less: Variable cost	(16,80,000)	(20,16,000)
Contribution	13,20,000	15,84,000
Less: Fixed Cost (W.No)	(7,20,000)	(7,20,000)
Less: Bad Debts	(60,000) [30 Lakhs x 2%]	(1,08,000) [36 Lakhs x 3%]
Less: Opportunity cost of investment in receivables	(15,000)	(51,300)
Net Benefit	5,25,000	7,04,700
Increase in Benefit		**1,79,700**

Working Notes:

1. **Computation of Fixed Cost:**

   Cost of Sales = Variable Cost + Fixed Cost

   At 30,00,000 Sales (Present Policy)

Particulars	Amount (Rs.)	Amount (Rs.)
Cost of Sales (Given)	30,00,000 x 80%	24,00,000
Less; Variable Cost (Given)	24,00,000 x 70 %	16,80,000
Fixed Cost		**7,20,000**

2. **Computation of Cost of Sales:**

Particulars	Amount (Rs.)	Amount (Rs.)
I. Sales	30,00,000	36,00,000
II. Variable Cost	16,80,000	20,16,000
III. Fixed Cost	7,20,000	7,20,000
Cost of Sales (II + III)	**24,00,000**	**27,36,000**

3. **Opportunity cost of Average investment :**

   = Cost of sale x Collection Period/360 x Rate of return

   Present Policy = 24,00,000 x 45/360 x 15% = 15,000

   Proposed policy = 27,36,000 x 45/360 x 15% = 51,300

   Recommendation: Proposed Policy i.e credit from 15 days to 45 days should be implemented by NM Ltd since the net benefit under this policy are higher than those under present policy.

PROBLEM NO. 14

Statement showing the Evaluation of Debtors Policies

Particulars	Proposed Policy Rs.
A. Expected Profit:	
a) Credit Sales	30,00,000
b) Total Cost	
i) Variable Costs	27,00,000
ii) Recurring Costs	25,000
Total Cost	**27,25,000**
c) Bad Debts	60,000
d) Expected Profit [(a) - (b) - (c)]	2,15,000
B. Opportunity Cost of Investments in Receivables	1,03,701
C. Net Benefits (A - B)	**1,11,299**

Recommendation: The Proposed Policy should be adopted since the net benefits under this policy are positive.

Working Note: Calculation of Opportunity Cost of Average Investments

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Collectionperiod}}{365} \times \frac{\text{Rate of Return}}{100}$$

Particulars	20%	30%	35%	13%	Total
A. Total Cost	5,45,000	8,17,500	9,53,750	3,54,250	26,70,500
B. Collection period	30/365	60/365	90/365	100/365	
C. Required Rate of Return	20%	20%	20%	20%	
D. Opportunity Cost (A x B x C)	9083.33	27,250	47,687.50	19,680.56	1,03,701.39

PROBLEM NO: 15

A. Calculation of PAT

Particulars	Amount (Rs.)
a) Sales	120000
b)Less: Cost of sales@85%	(102000)
c)Less: Bad debts @10%	(12000)
PBT	6000
Less: Tax@30%	(1800)
PAT	4200

B. Calculation of opportunity cost

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

A. Incremental Net benefit

Increment net benefit/Loss = A-B = 4200 – 5100 = 900 (loss)

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.16

a) In case of customer P, there is no increase in sales even if the credit is given. Hence comparative statement for Q & R is given below:

Particulars	Customer Q				Customer R			
1. Credit period (days)	0	30	60	90	0	30	60	90
2. Sales Units	2,000	3,000	4,000	5,000	-	-	2,000	3,000

	Rs. in lakhs				Rs.in lakhs			
3. Sales Value	360	540	720	900	-	-	360	540
4. Contribution at 20% (A)	72	108	144	180	-	-	72	108
5. Receivables: $\left(\frac{\text{Credit Period} \times \text{Sales}}{360}\right)$	-	45	120	225	-	-	60	135
6. Debtors at cost i.e. @ 80%	-	36	96	180	-	-	48	108
7. Cost of carrying debtors at 20% (B)	-	7.2	19.2	36	-	-	9.6	21.6
8. Excess of contributions over cost of carrying debtors (A - B)	72	100.8	124.8	144	-	-	62.4	86.4

The excess of contribution over cost of carrying Debtors is highest in case of credit period of 90 days in respect of both the customers Q and R. Hence, credit period of 90 days should be allowed to Q and R.

b)

i) Customer P is taking 2,000 Refrigerators whether credit is given or not. Customer R is taking 2,000 Refrigerators at credit for 60 days. Hence Q also may demand credit for 60 days compulsorily.

ii) Q will take 5,000 refrigerators at credit for 90 days whereas R would lift 3,000 refrigerators only. In such case Q will demand further relaxation in credit period i.e. Q may ask for 150 days credit.

PROBLEM NO: 17

Particulars	Present	Proposed
1. Sales	7,20,000	7,40,000
2. Variable cost (70% of 1)	5,04,000	5,18,000
3. Contribution (1-2)	2,16,000	2,22,000
4. Cost of Sales (2)	5,04,000	5,18,000
5. Collection Period (days)	30	20
6. Average Debtors (4 x 5/365)	41424.65	28383.56
7. Interest on Avg. debtors at 10%	4142	2838
8. Bad Debts (1 x 2%)	14,400	14,800
9. Discount Allowed	0	7,40,000x50/100x2/100 = 7400
10. (3-7-8-9)	1,97,458	1,96,962

PROBLEM NO: 18

Evaluation of factoring service

Particulars		Amount (Rs.)
A) Benefit		
a) Savings on bad debts	(100L x 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 ∴ Opportunity cost = 5.48L x 80% x 15%		65,760
TOTAL		2,15,760
B) Cost		
a) Factoring charges (100L x 2%)		2,00,000
TOTAL		2,00,000
NET BENEFIT = (A-B)		**15,760**

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

PROBLEM NO: 19

(i) Calculation of cost and benefits of factoring:

Particulars	Amount(Rs.)
A. Cost of factoring:	
Factoring fees (Rs.2,19,00,000 × 2.5%)	5,47,500
Annual interest on advances (90% × Rs.36,00,000 × 12%)	3,88,800
	9,36,300
B. Benefits of factoring:	
Saving in credit control cost	5,00,000
Net cost of factoring (A – B)	**4,36,300**

(ii) The cost of financing of receivable with bank overdraft

= 90% × Rs.36,00,000 × 15% = Rs.4,86,000

The net cost of factoring is lower than the bank overdraft finance by Rs. 49,700 i.e. Rs.4,86,000 - Rs.4,36,300. Therefore, the company is advised to opt factoring.

PROBLEM NO: 20

Workings:

Collection from debtors:

(Amount in Rs.)

Particulars	February	March	April	May	June	July	August	September
Total sales	1,20,000	1,40,000	80,000	60,000	80,000	1,00,000	80,000	60,000
Credit sales (80% of total sales)	96,000	1,12,000	64,000	48,000	64,000	80,000	64,000	48,000
Collections:								
One month		72,000	84,000	48,000	36,000	48,000	60,000	48,000
Two months			24,000	28,000	16,000	12,000	16,000	20,000
Total collections			1,08,000	76,000	52,000	60,000	76,000	68,000

Monthly Cash Budget for Six months, April to September, 2017 **(Amount Rs.)**

Receipts	April	May	June	July	August	September
Opening balance	20,000	20,000	20,000	20,000	20,000	20,000
Cash sales	16,000	12,000	16,000	20,000	16,000	12,000
Collection from debtors	1,08,000	76,000	52,000	60,000	76,000	68,000
Total cash available (A)	1,44,000	1,08,000	88,000	1,00,000	1,12,000	1,00,000
Payments:						
Purchases	48,000	64,000	80,000	64,000	48,000	80,000
Wages & salaries	9,000	8,000	10,000	10,000	9,000	9,000
Interest on debentures	3,000	-	-	3,000	-	-
Tax payment	-	-	-	5,000	-	-
Total payments (B)	60,000	72,000	90,000	82,000	57,000	89,000
Minimum cash balance desired	20,000	20,000	20,000	20,000	20,000	20,000
Total cash needed (C)	80,000	92,000	1,10,000	1,02,000	77,000	1,09,000
Surplus - deficit (A-C)	64,000	16,000	(22,000)	(2,000)	35,000	(9,000)
Investment/financing Temporary Investments	(64,000)	(16,000)	-	-	(35,000)	-
Liquidation of temporary investments or temporary borrowings	-	-	22,000	2,000	-	9,000
Total effect of investment/ financing (D)	(64,000)	(16,000)	22,000	2,000	(35,000)	9,000
Closing cash balance (A + D - B)	20,000	20,000	20,000	20,000	20,000	20,000

PROBLEM NO: 21

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	175	210	By Sales	500	600
To Stores	60	72	By Misc. Income	5	5
To Mfg. Expenses	80	96			
To Other expenses	50	75			
To Depreciation	50	50			
To Net profit	90	102			
	505	605		505	605

Cash Flow:

	(Rs. in lakhs)
Profit	102
Add: Depreciation	50
	152
Less: Cash required for increase in stock	25
Net cash inflow	127

Available for servicing the loan: 75% of Rs.1,27,00,000 i.e., Rs.95,25,000

Working Notes:

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

Likely consumption in year 3 : $Rs.600 \times \frac{35}{100}$ or Rs.210 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 22

The maximum permissible bank finance for the firm, under three methods may be ascertained as follows:

Method I: = 0.75 (CA – CL)
= 0.75 (510 – 160)
= Rs. 262.50 lacs

Method II: = 0.75 (CA) – CL
= 0.75 (510) – 160
= Rs. 222.50 lacs

Method III: = 0.75 (CA – CCA) – CL
= 0.75 (510 – 200) – 160
= Rs. 72.50 lacs

So, it may be noted that the MPBF decreases gradually from the first method to second method and then to third method. As the firm, has already availed the bank loan of Rs. 250 lacs, it can still avail a loan of Rs. 12.50 lacs as per the first method. However, as per the second and third method, it is eligible to get finance of Rs. 222.50 lacs and Rs. 72.50 lacs only whereas its present bank borrowings are Rs. 250 lacs

PROBLEM NO 23

Annual Benefit of accepting the Discount

$$\frac{Rs.1.5}{Rs.100 - Rs.1.50} X \frac{365 days}{40 - 10 days} = 18.53\%$$

Annual Cost = Opportunity Cost of foregoing interest on investment = 15%

If average invoice amount is Rs. 10,00,000

	If discount is	
	Accepted	Not Accepted
Payment to Supplier	9,85,000	10,00,000
Return on investment of Rs. 9,85,00 for 30 days {Rs. 9,85,000 × (30/365) × 15%}		(12,144)
	9,85,500	9,87,856

Thus, from above table it can be seen that it is cheaper to accept the discount .

PROBLEM NO: 24

a) Ram is confusing the percentage cost of using funds for 10 days with the cost of using funds for a year. These costs are clearly not comparable. One must be converted to the time scale of the other.

b) $\frac{3}{97} x \frac{365}{10} = 112.88\%$

c) Assuming that the firm has made the decision not to take the cash discount, it makes no sense to pay before the due date. In this case, payment 30 days after purchases are received rather than 15 days would reduce the annual interest cost from 112.88% to 25 percen $\left(\frac{3}{97} x \frac{365}{60-15} = 0.250859 \right)$

PROBLEM NO: 25

The T Ltd.'s credit policy is 2/20 net 40.

i) As per the Bank policy the average payment period does not exceed 40 days (30 days + 10 days). A/c number 46,92,108 are eliminated (payment period > 40 days) and A/c number 37,53,57 and 96 Will be selected. (payment period < 40 days).

ii) Statement showing the calculation of the amount which the bank will lend on a pledge of receivables if the bank uses a 10 per cent allowances for cash discount and returns

Account No.	Amount (Rs.) (a)	90 % of amount (Rs.) (b) = 90% of a	80% of amount (Rs.) (c) = 80% of (b)
37	50,000	45,000	36,000
53	30,000	27,000	21,600
57	5,500	4,950	3,960
96	30,000	27,000	21,600
		Total loan amount	83,160

PROBLEM NO: 26

a) Cost of trade credit:

Annualized Cash discount: $\frac{d}{1-d} x \frac{365}{n-p} = \frac{3}{97} x \frac{365}{90-30} = 18.81\%$

b) Cost of bank loan: Assuming the compensating balance would not otherwise be maintained, the real cost of not taking advantage of the discount would be

$$\frac{13}{90} = 14.44\%$$

c) Cost of factoring: The factor fee for the year would be

2% x Rs. 24,00,000 = Rs. 48,000

The savings affected, however, would be Rs. 36,000, giving a net factoring cost of Rs. 12,000. Borrowing Rs. 1,50,000 on the receivables would thus cost

$$\frac{12\% \text{ of } Rs.1,50,000 + Rs.12,000}{Rs.1,50,000} = \frac{Rs.18,000 + Rs.12,000}{Rs.1,50,000} = 20.00\%$$

Advise: Bank borrowing would be the cheapest source of funds.

THE END