

Questions	WCM PART 2 , DEBTORS (RECEIVABLES)MANAGEMENT
1	CW
2	HW Typed
3	CW
4	CW
5	CW
6	HW Typed
7	HW Typed
8	CW
9	HW Typed
10	CW
11	CW
12	HW Typed
13	HW Typed
14	CW
15	CW
16	CW
17	HW Typed
18	HW Typed
19	HW Typed
20	CW
21	CW
22	CW
23	HW Typed
24	CW
25	CW
26	CW
27	CW
28	CW

Q1 Evaluation of Customer & Company's Credit Policy

Particulars	1	2	3	4
Sales	100	100	100	100
less COGS (V)	-85	-85	-85	-85
less FC (5%)	-5	-5	-5	-5
less Bad Debt	-0	-2	-10	-20
Expected Profit	10	8	0	-10
less Int Cost on Debtors Cost	-1.66	-1.55	-1.48	-2.96
Net Benefit	8.34	6.45	-1.48	-12.96

The credit Policy suggest that sale to customers of type 3 & 4 will not profitable and should be avoided.

Wenid	1	2	3	4
(V+FC)	90	90	90	90
x ACP	x 45/365	x 42/365	x 40/365	x 80/365
x Interest	x 15%	x 15%	x 15%	x 15%
Int cost on Debtors Cost	1.66	1.55	1.48	2.96

Q3

Statement for evaluation of credit Policy

Particulars	Amount (₹)
Incremental Sales	1,20,000
less Incremental cost $(1,20,000 \times 90\%)$	- 1,08,000
less Incremental Bad Debt $(1,20,000 \times 5\%)$	- 6,000
Expected profit before Tax	6,000
less Tax 30%	- 1,800
Expected profit after Tax	4,200
less Expected return on Investment	- 3,375
<b>Net Benefit</b>	<b>₹ 825.</b>

Advice: Accept this proposal because we are earning more than expected return on Investment.

Q14

Statement for evaluation of New Customer.

Particulars	Amount (₹)
Incremental Sales	2,40,000
less Incremental Cost $(2,40,000 \times 80\%)$	- 1,92,000
less Bad Debt $(2,40,000 \times 10\%)$	- 24,000
Expected Incremental Profit	24,000
less Tax 30%	- 7,200
① Incremental Expected PAT	16,800
Cost of Sales = 1,92,000	
x ACP                      x 1.5/12	
x Rate                        x 10%	9,600
② Interest Cost on Debtors Cost	9,600
Net Benefit      ① - ②	7,200

Advice: Accept Proposal.

Q10 (1)

### For Customer A

No credit period should be allowed to customer A, because the sales remain same even if we offer more or less days to customer A.

So, we can earn highest from customer A, by not allowing any credit period to him.

### For Customer B

#### Statement for evaluation of credit policy

Particulars	0 days	30 days	60 days	90 days
Sales unit	1000	1500	2000	2500
Sales @ 750	750000	11,25,000	15,00,000	18,75,000
- VC @ 2/3	-5,00,000	-7,50,000	-10,00,000	-12,50,000
Expected Profit	2,50,000	3,75,000	5,00,000	6,25,000
less Int cost on <del>Debtors</del> cost				
(Cost x ASP x 20% 360)	0	-12,500	-33,333	-62,500
Net Benefit	2,50,000	3,62,500	4,66,667	5,62,500 ✓

Advice for customer B.- offer 90 days credit period.

## For customer C

### Statement of credit Policy evaluation

Particulars	60 days	90 days
Sale unit	1000	1500
Sales @ 750	750,000	11,25,000
- VC @ 2/3	- 5,00,000	- 7,50,000
Expected Profit (A)	2,50,000	3,75,000
- Int'l on Debtors Cost ( $\frac{\text{Cost} \times \text{ACP} \times 20\%}{360}$ )	- 16667	- 37500
Net Benefit	2,33,333	3,37,500

So, we should offer 90 days credit to Customer C.

(b) Problems faced by a company when different credit period are offered.

⇒ Customer A 😞 will feel dissatisfied as he is not granted any credit period, whereas Customer 'C' with purchase qty of 1000 units has been offered 60 days credit.

⇒ Customer B will also be dissatisfied because he is offered same credit period of 90 days as 'C' even when he is buying larger qty.

Q18

cont B

Present

I

II

Sales

3,000,000

3,000,000

3,000,000

Incremental Sales

0

cont II

Bad Debt

$30L \times 5\%$   
₹1,50,000

$30L \times 4\%$   
₹1,20,000

$30L \times 3\%$   
₹90,000

Saving in B.D

30,000

60,000

cont III Collection Cost

30,000

60,000

95,000

Incremental Collection Cost

30,000

65,000

cont IV

Sales  
x ACP

3,000,000  
x 50  
365

3,000,000  
x 40  
365

3,000,000  
x 30  
365

x Interest

x 10%

x 10%

x 10%

Int Cost on Debts

4,10,96

3,28,77

2,46,58

Saving in Int Cost

82,19

1,64,38

Self

Statement for evaluation of credit policy  
Particulars

	Alternative I	Alternative II
Incremental Sales	-	-
Saving in Bad Debt	30,000	60,000
less Incremental collection cost	-30,000	-5,000
Saving in Int Cost on Debtors	+ 8219	+16438
Net Benefit	8219	11,438

Advice: Select Alternative II, because it has higher Net Benefit.

Q.10

(1)

Statement for Customer Evaluation  
Particulars

Particulars	Amount
Incremental Sales	1,00,000
less Increment Production ( $12 \times 80\%$ )	- 80,000
less Incremented Bad Debt ( $12 \times 10\%$ )	- 10,000
Expected Profit before Tax	10,000
less Tax 50%	- 5,000
<b>(A) Expected Profit after Tax</b>	<b>5,000</b>
<b>(B) Incremental Int cost on Debt raised</b>	<b>2,500</b>
<b>Net Benefit</b>	<b>2,500</b>

Recommendation  $\rightarrow$  Yes, sales manager's proposal should be accepted.

1000(1)

Cost of Sales	₹ 80,000
x ACP	x 1.5/12
Cost of Debt raised	10,000
x Int rate	x 25%
<b>Int cost on Debt raised</b>	<b>2,500</b>

Qd 10 (N)

## Statement for calculation of Maximum Bad Debt

Particulars	Int rate 30%	Int rate 40%	Int rate 60%
Sales	1,00,000	1,00,000	1,00,000
less Prod Cost	- 80,000	- 80,000	- 80,000
less Bad Debt	- x	- y	- z
Profit before Tax	(20,000 - x)	(20,000 - y)	(20,000 - z)
- Tax @ 50%			
Expected PAT	(10,000 - 0.5x)	(10,000 - 0.5y)	(10,000 - 0.5z)
- Int Cost on Debtors Cost	- 3000	- 4000	- 6000
Net Benefit	(7000 - 0.5x)	(6000 - 0.5y)	(4000 - 0.5z)
Maximum Bad Debt acceptable	$7000 - 0.5x = 0$ $x = 14000$	$6000 - 0.5y = 0$ $y = 12000$	$4000 - 0.5z = 0$ $z = 8000$
Bad Debt %	$\frac{14000}{1,00,000} = 14\%$	12%	8%

<u>Cost of Sales</u>	80,000	80,000	80,000
x ACP	x 1.5/12	x 1.5/12	x 1.5/12
x Rate	x 30%	x 40%	x 60%
Cost of Debtors Cost	3000	4000	6000

Q11

Statement for evaluation of Debtors Policy

Particulars

Amount (₹)

Sales	15,00,000
less Cost of sales = $\frac{15,00,000 \times 145}{150} \rightarrow (150-5)$	- 14,50,000

less Bad Debt $15,00,000 \times 1\%$	- 15,000
less Receivable list	- 5,000

Expected Profit	(A)	39,000
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less Profit on Debtors cost		
Cost $(145,000 + 5,000) \times \frac{ACP}{365} \times 24\%$		- 68,788

Net Benefit		- 38,788
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Advice: Reject Proposal

Q10 Calculation of ACP. ❤️ ❤️

$$ACP = \frac{30 \times 15\%}{\text{Days}} + \frac{60 \times 34\%}{\text{Days}} + \frac{30 \times 30\%}{\text{Day}} + \frac{100 \times 20\%}{\text{Days}}$$

ACP = 71.9 days

Q114

## Statement for evaluation of credit policy.

Particulars

Present situation  
(30 days)

Proposal

(60 days)

Sales

1,50,000

+15% = 1,72,500

less Variable Cost

60% - 90,000

+15% = -1,03,500

less Fixed Cost

15% - 22,500

(done) - 22,500

less Bad Debt

1% - 1,500

4% - 6,900

Ⓐ Expected Profit

36,000

39,600

(VC+FC)  
x ACP(₹1,12,500)  
x 30/365(₹1,26,000)  
x 60/365Cost of Debtors  
x Rate9247  
x 12%20712  
x 12%

Ⓑ Int. Cost on Debtors Cost

1110

2485

Net Benefit Ⓐ Ⓑ

₹34,890

₹37,115

Recommendation → Accept increased credit terms as it has higher profit.

₹1,50,000 sales 1,50,000

Cost of sales 75% = (₹1,12,500)

Variable  
80%

₹90,000

Fixed  
20%

₹22,500

sales x ACP = Debtors

Cost of sales x ACP = Cost of Debtors

(VC+FC) x ACP = Cost of Debtors Int. rate

Int. rate on Debtors Cost

Q.15)

Statement for evaluation of credit policy

Particulars	Present	option I	option II
Sales	50,00,000	69,00,000	67,50,000
- VC 70% of SP	- 35,00,000	- 48,00,000	- 47,25,000
- Bad Debt	- 1,50,000	- 3,00,000	- 4,50,000
<b>(A) Expected Profit</b>	<b>13,50,000</b>	<b>15,00,000</b>	<b>15,75,000</b>
Cost of sales (VC)	35,00,000	48,00,000	47,25,000
x ACP	x 3/12	x 4/12	x 5/12
Cost of Debt only	8,75,000	14,00,000	19,68,750
x Int rate	x 20%	x 20%	x 20%
<b>(B) Int'l on Debt only</b>	<b>1,75,000</b>	<b>2,80,000</b>	<b>3,93,750</b>
Net Benefit	11,75,000	12,20,000	11,81,250

Advice: Select policy option I, because it has highest Net Benefit.

Q.16) Calculation of ACP

$ACP = \frac{12 \times \text{Debtors}}{\text{Credit Sales}}$

$\frac{12 \times 12.5L}{50L}$

3 months ✓

$\frac{12 \times 20L}{60L}$

4 months ✓

$\frac{12 \times 28.125L}{67.5L}$

5 months ✓

Q16 Note: As question is silent we can solve this question by Total Approach & Incremental Approach, we have followed **Incremental Approach**.

**Statement for evaluation of credit Policy**

Particulars	Policy (I)	Policy (II)
Incremental Sales (₹m)	12,00,000	15,00,000
less Incremental VC	- 8,40,000	- 10,50,000
less Incremental Bad Debt	- 1,20,000	- 1,80,000
(A) Incremental Expected Profit	2,40,000	2,70,000
(B) Incremental Int. cost on Debtors Cost	91,000	1,57,500
Net Benefit (A) - (B)	1,49,000 ✓	1,12,500 ✗

**Advice: Select Policy (I), as it has higher Net Benefit.**

<u>WON (A)</u>	Present	I	II
VC of sales x ACP	24,00,000 x 3m 12	29,40,000 x 4m 12	31,50,000 x 5m 12
Cost of Debtors =	5,25,000	9,80,000	13,12,500
x Int. rate	x 20%	x 20%	x 20%
Int. Cost on Debtors Cost	1,05,000	1,96,000	2,62,500
	<b>91,000</b>		<b>1,57,500</b>

con 1

Present

I

II

Sales  
Incremental

39,00,000

42,00,000

45,00,000

12,00,000

15,00,000

con 2

Variable Cost  
70% of Sales  
Incremental VC

27,10,000

29,40,000

31,50,000

8,40,000

10,50,000

con 3

Bad Debt

Incremental  
B.D

3%  
x 30L  
90000

5%  
x 42L  
21,00,000

6%  
x 45L  
27,00,000

1,20,000

1,80,000

con 5

ACP = 12  
DTR

$\frac{12}{4}$

$\frac{12}{3}$

$\frac{12}{2.4}$

ACP =

3m

4m

5m

Solved Q

Statement for evaluation of credit policy  
(when all customers avail extended credit policy)

Particulars	Present (ACP = 1m)	Proposed (ACP = 2m)
Sales	$400 \times 12 \times 1000 = 48,00,000$	$+25\% = 60,00,000$
less Cost	$400 \times 12 \times 800 = -38,40,000$	$+25\% = -48,00,000$
① Expected Profit	9,60,000	12,00,000
less Int. cost on Debtors cost	-1,28,000	-3,29,000
less Int. on stock	-	$(2,00,000 \times 40\%) = -80,000$
Saving in Int. cost on Creditors	-	$(1,00,000 \times 40\%) = +40,000$
Net Benefit	₹ 8,32,000	₹ 8,49,000

Advice: Accept New proposal of 2 months credit because it provides ₹ 8000 more in Net Benefit.

<u>work's</u>	VC	38,40,000	48,00,000
x ACP		x 1/12	x 2/12
x Int. rate		x 40%	x 40%
Int. cost on Debtors cost		₹ 1,28,000	₹ 3,29,000



## Statement for evaluation of credit Policy

(where New customers avail extended credit Policy)

Particulars	Present (ACP 1m)	Proposed (ACP=2m)
Sales	$400 \times 12 \times 1000 = 48,00,000$	$+25\% = 60,00,000$
Exp Cost	$400 \times 12 \times 800 = -38,40,000$	$+25\% = -48,00,000$
Expected Profit	$9,60,000$	$12,00,000$
Int Cost on Debtors	$-1,28,000$	<b><span style="border: 1px solid black; padding: 2px;">-1,92,000</span></b>
Int on stock	-	$(2,00,000 \times 4\%) = -80,000$
Saving in Int cost on Creditors	-	$(1,00,000 \times 4\%) = +40,000$
<b>Net Benefit</b>	<b>₹ 8,32,000</b>	<b>₹ 9,68,000</b>

**Advice:** Accept New proposal of 2 months credit because it provides 136000 more in Net Benefit.

work

	Present	Proposed
VC	$38,40,000$	$₹ 48,00,000$
	$\times 1/12$	
	$\times 40\%$	
	<b><span style="border: 1px solid black; padding: 2px;">1,28,000</span></b>	
		$\begin{array}{l} \downarrow \text{(old)} \\ 38,40,000 \\ \times 1/12 \\ \times 40\% \end{array}$
		$\begin{array}{l} \downarrow \text{(Increase)} \\ 9,60,000 \\ \times 2/12 \\ \times 40\% \end{array}$
	<b><span style="border: 1px solid black; padding: 2px;">1,28,000</span></b>	<b><span style="border: 1px solid black; padding: 2px;">64,000</span></b>
		<b><span style="border: 1px solid black; padding: 2px;">1,92,000</span></b>

Qd. 21

	Present	Proposed
ACP	45 days	60 days
Sales	₹ 2,56,48,750	₹ 2,82,13,625
B/D	1.5%	2%

Statement for evaluation of credit policy

Particulars	Present	Proposed
Sales	2,56,48,750	2,82,13,625
- VC 72%	-1,84,67,100	-2,03,13,810
- Bad debt	1.5% - 384,731	2% 564,273
Expected Profit before Tax	67,96,919	73,35,542
- Tax 35%	-23,78,922	-25,67,440
Ⓐ Expected Profit	44,17,997	47,68,102

Particulars	Present	Proposed
Ⓑ Interest Cost	(1,84,67,100)	(2,03,13,810)
x ACP/365	x 45/365	x 60/365
x Int rate	x 15%	x 15%
	= -3,41,515	= -5,00,888

Net Benefit Ⓐ Ⓑ	40,76,483	42,67,214
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Net Incremental gain

₹ 1,90,731

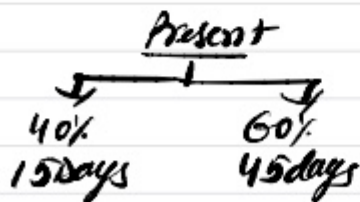
Advice: Accept Proposal.

sol 22)

### Statement for evaluation of credit Policy

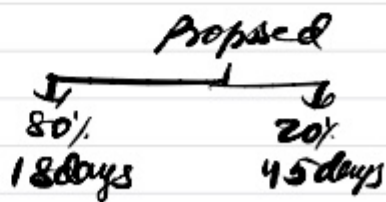
Account	Present '2/15 net 45'	Proposed '3/18 net 45'
Sales	10,00,00,000	+25% = 1,25,00,000
less VC	70% - 7,00,00,000	(125L x 68%) = - 85,00,000
less FC	- 12,00,000	(12L + 3L) - 15,00,000
less Discount	$(100L \times 40\% \times 2\%)$ - 80,000	$(125L \times 80\% \times 3\%)$ - 3,00,000
① Expected Profit	17,20,000	22,00,000
② Int cost on Debtors cost		
$(VC+FC) \times ACP/365 \times \text{Int rate}$	$(82L / 365) \times 24\%$ 1,77,929	$(934 / 365) \times 24\%$ 1,53,863
Net Benefit	₹ 15,42,071	₹ 20,46,137

W/O



$$ACP = 40\% \times 15 + 60\% \times 45$$

$$= 33 \text{ days}$$



$$ACP = 80\% \times 18 + 20\% \times 45$$

$$= 23.4 \text{ days}$$

<u>oldly 10%</u>	Present	Proposed
Sales	80,00,000	85,00,000
ACP	20 days	14 days
VC 85%		
Total Cost 95%		
Discounted customer	50%	80%
Term	1/10 net 30	2/10 net 30

Particulars	Statement for evaluation of credit Policy	
	Present 1/10 net 30	Proposed 2/10 net 30
Sales	80,00,000	85,00,000
- VC 85%	- 68,00,000	85% - 72,25,000
- FC 10%	- 8,00,000	Save $\rightarrow$ - 8,00,000
- Discount	$(80 \times 50\%) \times 2\%$ - 40,000	$(85 \times 80\%) \times 2\%$ - 1,36,000
(A) Expected Profit	3,60,000	3,39,000
(B) (VC+FC) x ACP x Int rate	$(76 \times 20/360) \times 10\%$ - 42,222	$(80,25,000 \times 14/360) \times 10\%$ - 31,208
Net Benefit (A) - (B)	3,17,778	3,07,792

Effect of Proposal  $\rightarrow$  If we introduce relaxation of credit Policy it will lead to loss of ₹ 9986.

Q125)

### Self Notes:

- Bank sirf 80 loan dega against those Debtors (Accounts)
  - Jo overdue nahi hai (Payment due < 30 days hai)
  - Jinki average Payment Period 40 days se kam hai. (30 days + 10 days)

And end mei bank 10% loan aur reduce kardega jeh keh kar ki stayad customers return kar de gadi.

### Main Solution:

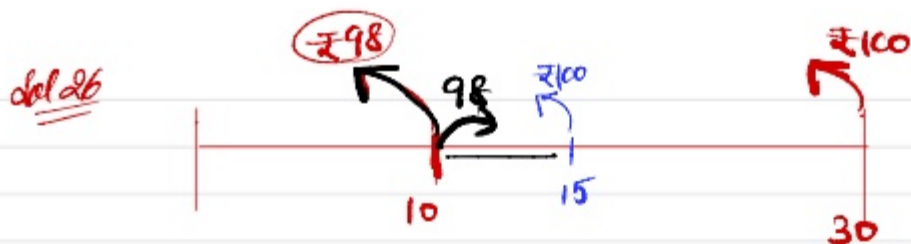
- Bank will not lend for following customers →
- Account 91, as it is overdue.
  - Account 114, as it is overdue.
  - Account 123, as its average payment period > 40 days.

### Statement of credit offered by Bank.

Account	Amount of Debtors.
74	₹ 29000
107	₹ 14000
108	₹ 2,300
116	₹ 29000
Total Debtors	₹ 67800
- 10% p/s returns	₹ 6780
Net Debtors =	₹ 61020

Amount of loan offered  
by bank

$$= ₹ 61020 \times 80\% = \boxed{₹ 48816}$$



(i) Mr. Ram is paying ₹100 on 15<sup>th</sup> day and not utilizing full credit period of 30 days.

Either he should have paid on 30 day, utilizing full credit period or he should have paid early on 10<sup>th</sup> day utilizing 2% discount.

(ii) working

$$\text{Int} = \frac{98 \times 2\% \times 5}{365}$$

$$\bar{2} = \frac{98 \times 2 \times 5}{100 \times 365}$$

$$\frac{2}{98} \times \frac{365}{5} \times 100 = x$$

$$\boxed{149\% = x}$$

As you are paying on 15<sup>th</sup> day, you are pay 149% interest on ₹98 for 5 days as you are paying ₹2 interest in just 5 days.

(iii) If credit facility was not available so early payment was not possible, thus Mr. Ram should have at least paid on 30<sup>th</sup> day utilizing full credit period.

Alternate way

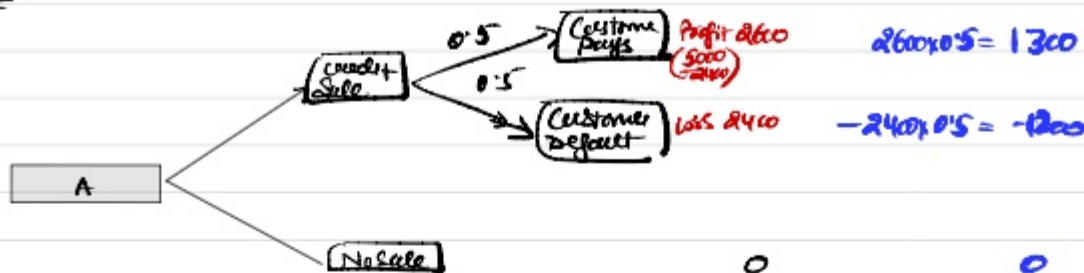
(ii) using formulae

$$\text{rate} = \frac{d}{100-d} \times \frac{365}{t}$$

$$= \frac{2}{100-2} \times \frac{365}{5}$$

$$= \frac{2}{98} \times \frac{365}{5} \times 100 = \boxed{149\%}$$

Q127



Net Benefit  $\rightarrow$  2100

As answer is positive, so, we should make credit sales.



$$\text{Discount offer} = \frac{101.972 - 100}{101.972} \times 100 = \boxed{1.933\%}$$

You want to offer product today at ₹100, but we offer credit period of 30 days, then we will have to **QUOTE Price of product at ₹101.972**

Discount rate is calculated on quoted price (not cash price)

Thus discount rate is calculated as  $\left( \frac{101.972 - 100}{101.972} \right)$

$$= 1.933\%$$



option I  
Pay ₹ 98 on  
10<sup>th</sup> day

or option II  
Don't pay ₹ 98 on 10<sup>th</sup> day,  
but invest it (or use it) for  
next 35 days and pay ₹ 100  
(including ₹ 2 extra) on 45<sup>th</sup> day

$$\left( \frac{100}{100-d} \right)^{\frac{365}{t}} - 1$$

$$\Rightarrow \left( \frac{100}{100-2} \right)^{\frac{365}{35}} - 1$$

$$\Rightarrow \boxed{23.5\%}$$

## 08- Management of Receivables 7b - Solutions

### Solution 02:

#### Statement Showing Evaluation of Various Credit Policies under Consideration

Particulars	Policy I	Policy II	Policy III	Policy IV
Incremental gains: Contribution	1,50,000	3,00,000	4,20,000	4,50,000
Total Incremental Gains (A)	1,50,000	3,00,000	4,20,000	4,50,000
Incremental Costs: Opportunity cost of Investment of debtor	42,014	88,889	1,38,194	1,82,639
Total Incremental Costs (B)	42,014	88,889	1,38,194	1,82,639
Net incremental Gains (A) – (B)	1,07,986	2,11,111	2,81,806	2,67,361

Working Notes:

#### (i) Computation of Incremental Contribution (₹ In Lakhs)

Particulars	Existing	Policy I	Policy II	Policy III	Policy IV
Sales	60	65	70	74	75
Less: Variable contribution of sales (70%)	(42)	(45.5)	(49)	(51.8)	(52.5)
Contribution	18	19.5	21	22.2	22.5
Incremental Contribution		1.5	3	4.2	4.5

#### (ii) Computation of Incremental Opportunity cost of Investment in Debtors

Particulars	Existing	Policy I	Policy II	Policy III	Policy IV
Total Cost of Sales (Variable Cost + Total Fixed Cost)	50,00,000	53,50,000	57,00,000	59,80,000	60,50,000
Average collection period (Days)	20	30	40	50	60
Average Investment in Debtors	2,77,778	4,45,834	6,33,333	8,30,556	10,08,334
Incremental investment in Debtors		1,68,056	3,55,555	5,52,778	7,30,556
Opportunity cost of Incremental investment in Debtors		42,014	88,889	1,38,194	1,82,639

### Solution 07:

#### A. Statement showing the Evaluation of Debtors Policies (Total Approach)

Particulars	Present Policy 30 days	Proposed Policy A 40 days	Proposed Policy B 50 days	Proposed Policy C 60 days	Proposed Policy D 75 days
	₹	₹	₹	₹	₹
A. Expected Profit:					
(a) Credit Sales	6,00,000	6,30,000	6,48,000	6,75,000	6,90,000
(b) Total Cost other than Bad Debts					
(i) Variable Costs [Sales × 2/ 3]	4,00,000	4,20,000	4,32,000	4,50,000	4,60,000
(ii) Fixed Costs	50,000	50,000	50,000	50,000	50,000
	4,50,000	4,70,000	4,82,000	5,00,000	5,10,000
(c) Bad Debts	6,000	9,450	12,960	20,250	27,600
(d) Expected Profit [(a) – (b) – (c)]	1,44,000	1,50,550	1,53,040	1,54,750	1,52,400
B. Opportunity Cost of Investments in Receivables	7,500	10,444	13,389	16,667	21,250
C. Net Benefits (A – B)	1,36,500	1,40,106	1,39,651	1,38,083	1,31,150

Recommendation: The Proposed Policy A (i.e. increase in collection period by 10 days or total 40 days) should be adopted since the net benefits under this policy are higher as compared to other policies.

## Working Notes:

$$\begin{aligned} \text{(i) Calculation of Fixed Cost} &= [\text{Average Cost per unit} - \text{Variable Cost per unit}] \times \text{No. of Units sold} \\ &= [₹ 2.25 - ₹ 2.00] \times (₹ 6,00,000/3) \\ &= ₹ 0.25 \times 2,00,000 = ₹ 50,000 \end{aligned}$$

## (i) Calculation of Opportunity Cost of Average Investments

$$\text{Opportunity Cost} = \text{Total Cost} \times (\text{Collection period}/360) \times (\text{Rate of Return}/100)$$

$$\begin{aligned} \text{Present Policy} &= 4,50,000 \times (30/360) \times (20/100) = 7,500 \\ \text{Policy A} &= 4,70,000 \times (40/360) \times (20/100) = 10,444 \\ \text{Policy B} &= 4,82,000 \times (50/360) \times (20/100) = 13,389 \\ \text{Policy C} &= 5,00,000 \times (60/360) \times (20/100) = 16,667 \\ \text{Policy D} &= 5,10,000 \times (75/360) \times (20/100) = 21,250 \end{aligned}$$

**Another method of solving the problem is Incremental Approach. Here we assume that sales are all credit sales.**

Particulars	Present Policy 30 days	Proposed Policy A 40 days	Proposed Policy B 50 days	Proposed Policy C 60 days	Proposed Policy D 75 days
	₹	₹	₹	₹	₹
A. Incremental Expected Profit:					
(a) Incremental Credit Sales	---	30,000	48,000	75,000	90,000
(b) Incremental Costs					
(i) Variable Costs	---	20,000	32,000	50,000	60,000
(ii) Fixed Costs	---	-	-	-	-
(c) Incremental Bad Debt Losses	---	3,450	6,960	14,250	21,600
(d) Incremental Expected Profit (a - b - c)		6,550	9,040	10,750	8,400
B. Required Return on					

Incremental Investments:					
(a) Cost of Credit Sales	4,50,000	4,70,000	4,82,000	5,00,000	5,10,000
(b) Collection period	30	40	50	60	75
(c) Investment in Receivable (a × b/360)	37,500	52,222	66,944	83,333	1,06,250
(d) Incremental Investment in Receivables	---	14,722	29,444	45,833	68,750
(e) Required Rate of Return (in %)		20	20	20	20
(f) Required Return on Incremental Investments (d × e)	---	2,944	5,889	9,167	13,750
C. Net Benefits (A - B)	---	3,606	3,151	1,583	- 5,350

Recommendation: The Proposed Policy A should be adopted since the net benefits under this policy are higher than those under other policies.

**Solution 6:****Working Notes:****(i) Calculation of Cash Discount**

Cash Discount = Total credit sales × % of customers who take up discount × Rate

Present Policy = 1,35,00,000 × 0.30 × 0.02 = ₹ 81,000

Proposed Policy = 1,75,50,000 × (0.30 × 2) × 0.03 = ₹ 3,15,900

**(ii) Opportunity Cost of Investment in Receivables**

Opportunity Cost

= Total Cost of Credit Sales ×  $\frac{\text{Average collection period}}{360}$  ×  $\frac{\text{Rate of return}}{100}$

**Present Policy** = 1,18,80,000 ×  $\frac{48^*}{360}$  × 12% = ₹ 1,90,080

Funds required for Proposed Policy = 1,52,28,000 ×  $\frac{36^*}{360}$  = 15,22,800

Add: Increase in average Stock = 4,00,000

Less: Increase in average Creditors = 2,40,000

₹ 16,82,800

**Proposed policy** = 16,82,800 × 12% = ₹ 2,01,936

\* Weighted average collection period = (20 days × 0.30) + (60 days × 0.70) = **48 days**

# Weighted average collection period = (20 days × 0.60) + (60 days × 0.40) = **36 days**

**Statement showing Evaluation of Credit Policies**

Particulars	Present Policy (₹)	Proposed Policy (₹)
Credit Sales (A) (90,000 units × 150); (90,000 units × 150 × 1.3)	1,35,00,000	1,75,50,000
Variable Cost @ 80% of sales	1,08,00,000	1,40,40,000
Fixed Cost (90,000 units × 12) (10,80,000 × 1.1)	10,80,000	11,88,000
Total Cost other than Bad Debts and Cash Discount (B)	1,18,80,000	1,52,28,000
<b>Profit before Bad Debts and Cash Discount (A) – (B)</b>	16,20,000	23,22,000
Less: Bad Debts @ 2% and 1.5%	2,70,000	2,63,250
Less: Cash Discount	81,000	3,15,900
Expected profit	12,69,000	17,42,850
Less: Opportunity Cost of Investment in Receivables	1,90,080	2,01,936
<b>Net Benefit</b>	<b>10,78,920</b>	<b>15,40,914</b>

**Advise:** Proposed policy should be adopted since the net benefit is increased by ₹ 4,61,994 (₹ 15,40,914 - ₹ 10,78,920)

**Alternatively, the question can be solved based on incremental approach as below:**

**Working Notes:****(i) Calculation of Cash Discount**

Cash Discount = Total credit sales × % of customers who take up discount × Rate

Present Policy = 1,35,00,000 × 0.30 × 0.02 = ₹ 81,000

Proposed Policy = 1,75,50,000 × (0.30 × 2) × 0.03 = ₹ 3,15,900

**(ii) Opportunity Cost of Investment in Receivables**

Opportunity Cost

= Total Cost of Credit Sales ×  $\frac{\text{Average collection period}}{360}$  ×  $\frac{\text{Rate of return}}{100}$

**Present Policy** = 1,18,80,000 ×  $\frac{48^*}{360}$  × 12% = ₹ 1,90,080

Funds required for Proposed Policy = 1,52,28,000 ×  $\frac{36^*}{360}$  = 15,22,800

Add: Increase in average Stock = 4,00,000

Less: Increase in average Creditors = 2,40,000

₹ 16,82,800

**Opportunity Cost of Investment of Proposed policy** = 16,82,800 × 12% = ₹ 2,01,936

\*Weighted average collection period = (20 days × 0.30) + (60 days × 0.70) = **48 days**

#Weighted average collection period = (20 days × 0.60) + (60 days × 0.40) = **36 days**

**Statement showing Evaluation of Credit Policies**

₹

Particulars	Present policy	Proposed policy	Incremental
Sales	1,35,00,000	1,75,50,000	
Less: Variable cost	1,08,00,000	1,40,40,000	
Contribution	27,00,000	35,10,000	8,10,000
Fixed cost	10,80,000	11,88,000	-1,08,000
cash discount	81,000	3,15,900	-2,34,900
Savings in Bad debt	2,70,000	2,63,250	6,750
Saving in Opportunity cost	1,90,080	2,01,936	-11,856
<b>Net benefit</b>			<b>4,61,994</b>

**Advise:** Proposed policy should be adopted since the net benefit is increased by ₹ 4,61,994

### Solution 7:

#### A. Statement showing the Evaluation of Debtors Policies (Total Approach)

Particulars	Present Policy	Proposed Policy	Proposed Policy B	Proposed Policy C	Proposed Policy D
	30 days	A 40 days	50 days	60 days	75 days
	₹	₹	₹	₹	₹
<b>A. Expected Profit:</b>					
(a) Credit Sales	6,00,000	6,30,000	6,48,000	6,75,000	6,90,000
(b) Total Cost other than Bad Debts					
(i) Variable Costs [Sales × 2/ 3]	4,00,000	4,20,000	4,32,000	4,50,000	4,60,000
(ii) Fixed Costs	50,000	50,000	50,000	50,000	50,000
	4,50,000	4,70,000	4,82,000	5,00,000	5,10,000
(c) Bad Debts	6,000	9,450	12,960	20,250	27,600
(d) Expected Profit [(a) – (b) – (c)]	1,44,000	1,50,550	1,53,040	1,54,750	1,52,400
<b>B. Opportunity Cost of Investments in Receivables</b>	7,500	10,444	13,389	16,667	21,250
<b>C. Net Benefits (A – B)</b>	1,36,500	1,40,106	1,39,651	1,38,083	1,31,150

**Recommendation:** The Proposed Policy A (i.e. increase in collection period by 10 days or total 40 days) should be adopted since the net benefits under this policy are higher as compared to other policies.

#### Working Notes:

(i) **Calculation of Fixed Cost** = [Average Cost per unit – Variable Cost per unit] × No. of Units sold  
= [₹ 2.25 - ₹ 2.00] × (₹ 6,00,000/3)  
= ₹ 0.25 × 2,00,000 = ₹ 50,000

#### (ii) Calculation of Opportunity Cost of Average Investments

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Collection period}}{360} \times \frac{\text{Rate of Return}}{100}$$

$$\text{Present Policy} = 4,50,000 \times \frac{30}{360} \times \frac{20}{100} = 7,500$$

$$\text{Policy A} = 4,70,000 \times \frac{40}{360} \times \frac{20}{100} = 10,444$$

$$\text{Policy B} = 4,82,000 \times \frac{50}{360} \times \frac{20}{100} = 13,389$$

$$\text{Policy C} = 5,00,000 \times \frac{60}{360} \times \frac{20}{100} = 16,667$$

$$\text{Policy D} = 5,10,000 \times \frac{75}{360} \times \frac{20}{100} = 21,250$$

**B.** Another method of solving the problem is **Incremental Approach**. Here we assume that sales are all credit sales.

Particulars	Present Policy 30 days	Proposed Policy A 40 days	Proposed Policy B 50 days	Proposed Policy C 60 days	Proposed Policy D 75 days
	₹	₹	₹	₹	₹
<b>A. Incremental Expected Profit:</b>					
(a) Incremental Credit Sales	---	30,000	48,000	75,000	90,000

(b) Incremental Costs					
(i) Variable Costs	---	20,000	32,000	50,000	60,000
(ii) Fixed Costs	---	-	-	-	-
(c) Incremental Bad Debt Losses	---	3,450	6,960	14,250	21,600
(d) Incremental Expected Profit (a – b – c)]		<b>6,550</b>	<b>9,040</b>	<b>10,750</b>	<b>8,400</b>
<b>B. Required Return on Incremental Investments:</b>					
(a) Cost of Credit Sales	4,50,000	4,70,000	4,82,000	5,00,000	5,10,000
(b) Collection period	30	40	50	60	75
(c) Investment in Receivable (a × b/360)	37,500	52,222	66,944	83,333	1,06,250
(d) Incremental Investment in Receivables	---	14,722	29,444	45,833	68,750
(e) Required Rate of Return (in %)		20	20	20	20
(f) Required Return on Incremental Investments (d × e)	---	<b>2,944</b>	<b>5,889</b>	<b>9,167</b>	<b>13,750</b>
<b>C. Net Benefits (A – B)</b>	---	3,606	3,151	1,583	- 5,350

**Recommendation:** The Proposed Policy A should be adopted since the net benefits under this policy are higher than those under other policies.

**C.** Another method of solving the problem is by computing the **Expected Rate of Return**.

$$\text{Expected Rate of Return} = \frac{\text{Incremental Expected Profit}}{\text{Incremental Investment in Receivables}} \times 100$$

$$\text{For Policy A} = \frac{₹6,550}{₹14,722} \times 100 = 44.49\%$$

$$\text{For Policy B} = \frac{₹9,040}{₹29,444} \times 100 = 30.70\%$$

$$\text{For Policy C} = \frac{₹10,750}{₹45,833} \times 100 = 23.45\%$$

$$\text{For Policy D} = \frac{₹8,400}{₹68,750} \times 100 = 12.22\%$$

**Recommendation:** The Proposed Policy A should be adopted since the Expected Rate of Return (44.49%) is more than the Required Rate of Return (20%) and is highest among the given policies compared.

### Solution 9:

(a) **Statement showing the Evaluation of Credit policies (Total Approach)**

Particulars	Present Policy	Proposed Policy X	Proposed Policy Y
	(2 Months)	(1.5 Months)	(1 Month)
	₹ in lakhs	₹ in lakhs	₹ in lakhs
<b>A. Expected Profit:</b>			
(a) Credit Sales*	360	360	360
(b) Total Cost other than Bad Debts and collection expenditure (360/150 x 120)	288	288	288
(c) Bad Debts	10.8 (360 x 0.03)	7.2 (360 x 0.02)	3.6 (360 x 0.01)
(d) Collection expenditure	8	12	20
(e) Expected Profit [(a) – (b) – (c) – (d)]	53.2	52.8	48.4
<b>B. Opportunity Cost of Investments in Receivables (Working Note)</b>	9.6	7.2	4.8
<b>C. Net Benefits (A – B)</b>	<b>43.6</b>	<b>45.6</b>	<b>43.6</b>

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

\*Note: It is assumed that all sales are on credit.

**Working Note:**

Calculation of Opportunity Cost of Average Investments

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Collection period}}{12} \times \frac{\text{Rate of Return}}{100}$$

$$\text{Present Policy} = ₹ 288 \text{ lakhs} \times \frac{2}{12} \times \frac{20}{100} = ₹ 9.6 \text{ lakhs}$$

$$\text{Policy X} = ₹ 288 \text{ lakhs} \times \frac{1.5}{12} \times \frac{20}{100} = ₹ 7.2 \text{ lakhs}$$

$$\text{Policy Y} = ₹ 288 \text{ lakhs} \times \frac{1}{12} \times \frac{20}{100} = ₹ 4.8 \text{ lakhs}$$

**Alternatively**

Statement showing the Evaluation of Credit policies (Incremental Approach)

Particulars	Present Policy	Proposed Policy X	Proposed Policy Y
	(2 Months)	(1.5 Months)	Y (1 Month)
	₹ in lakhs	₹ in lakhs	₹ in lakhs
(a) Credit Sales*	360	360	360
(b) Cost of sales (360/150 x 120)	288	288	288
(c) Receivables (Refer Working Note)	48	36	24
(d) Reduction in receivables from present policy	-	12	24
(A) Savings in Opportunity Cost of Investment in Receivables (@ 20%)	-	2.4	4.8
(e) Bad Debts	10.8 (360 x 0.03)	7.2 (360 x 0.02)	3.6 (360 x 0.01)
(B) Reduction in bad debts from present policy	-	3.6	7.2
(f) Collection expenditure	8	12	20
(C) Increase in Collection expenditure from Present policy	-	4	12
(D) Net Benefits (A +B-C)		2	0

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

**\*Note:** It is assumed that all sales are on credit.

**Working Note:**

$$\text{Calculation of Investment in Receivables} = \text{Total Cost} \times \frac{\text{Collection period}}{12}$$

$$\text{Present Policy} = ₹ 288 \text{ lakhs} \times \frac{2}{12} = ₹ 48 \text{ lakhs}$$

$$\text{Policy X} = ₹ 288 \text{ lakhs} \times \frac{1.5}{12} = ₹ 36 \text{ lakhs}$$

$$\text{Policy Y} = ₹ 288 \text{ lakhs} \times \frac{1}{12} = ₹ 24 \text{ lakhs}$$

**Solution 12:**

Statement showing the Evaluation of credit Policies

Particulars	Proposed Policy ₹
A. Expected Profit:	
(a) Credit Sales	40,00,000
(b) Total Cost	
(i) Variable Costs (₹ 380 x 10000 units)	38,00,000
(ii) Recurring Costs	20,000
	38,20,000
(c) Bad Debts	80,000

(d) Expected Profit [(a) – (b) – (c)]	1,00,000
B. Opportunity Cost of Investments in Receivables	1,31,790
C. Net Benefits (A – B)	(31,790)

**Recommendation:** The Proposed Policy should not be adopted since the net benefits under this policy are negative.

**Working Note:** Calculation of Opportunity Cost of Average Investments

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Collection period}}{360} \times \frac{\text{Rate of Return}}{100}$$

Particulars	20%	30%	30%	18%	Total
A. Total Cost	7,64,000	11,46,000	11,46,000	6,87,600	37,43,600
B. Collection period	30/360	60/360	90/360	100/360	
C. Required Rate of Return	18%	18%	18%	18%	
D. Opportunity Cost (A x B x C)	11,460	34,380	51,570	34,380	1,31,790

### Solution 13:

#### Evaluation of Alternative Credit Policies

Particulars	Present (₹)	Policy A (₹)	Policy B (₹)	Policy C (₹)	Policy D (₹)
Sales	50,00,000	56,00,000	60,00,000	62,00,000	63,00,000
Variable Cost at 80%	40,00,000	44,80,000	48,00,000	49,60,000	50,40,000
Contribution	10,00,000	11,20,000	12,00,000	12,40,000	12,60,000
Less: Fixed Costs	6,00,000	6,00,000	6,00,000	6,00,000	6,00,000
Profit	4,00,000	5,20,000	6,00,000	6,40,000	6,60,000
Cost of Debtors p.a. = Total Costs	46,00,000	50,80,000	54,00,000	55,60,000	56,40,000
Collection Period Average Debtors = $\frac{\text{Cost of Sales} \times \text{Collection Period}}{360}$	30 days 3,83,333	45 days 6,35,000	60 days 9,00,000	75 days 11,58,333	90 days 14,10,000
Interest on Average Debtors @ 20%	76,667	1,27,000	1,80,000	2,31,667	2,82,000
Net Benefit (Profit – Interest)	3,23,333	3,93,000	4,20,000	4,08,333	3,78,000

**Conclusion:** The Company may choose Policy B to maximize Net Benefit.

### Solution 17:

#### Statement showing evaluation of Credit Policies

(Amount in lakhs)

Particulars	Present (₹.)	Proposed Policy (₹.)	
		Option I	Option II
A Expected Profit:			
(a) Credit Sales	180	220	280
(b) Total Cost other than Bad Debts:			
Variable Costs (60%)	108	132	168
(c) Bad Debts	6	18	38
(d) Expected Profit [(a)-(b)-(c)]	66	70	74
B Opportunity Cost of Investment in Debtors (Refer workings)	6.75	10.31	17.5
C Net Benefits [A - B]	59.25	59.69	56.5

**Recommendation:** The Proposed Policy I should be adopted since the net benefits under this policy is higher than those under other policies.

**Workings:**

Calculation of Opportunity Cost of Investment in Debtors

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Collection Period}^*}{12} \times \frac{\text{Rate of Return}}{100}$$

\*Collection period (in months) = 12/Debtors turnover ratio

Present Policy = ₹. 108 ×  $\frac{12/4}{12}$  ×  $\frac{25}{100}$  = ₹. 6.75 lakhs

Proposed Policy I = ₹. 132 ×  $\frac{12/3.2}{12}$  ×  $\frac{25}{100}$  = ₹. 10.31 lakhs

Proposed Policy II = ₹. 168 ×  $\frac{12/2.4}{12}$  ×  $\frac{25}{100}$  = ₹. 17.5 lakhs

**Solution 18:**

Particulars	Present (₹)	Proposed Policy (₹)
Sales (18,90,000 ÷ 21 = 90,000 units)	18,90,000	23,62,500
Proposed Sales (90,000 units + 25% = 1,12,500 units at ₹ 21 p.u.)		
Less: Variable Cost at ₹ 14 p.u.	12,60,000	15,75,000
Contribution	6,30,000	7,87,500
Cost of Debtors p.a. (Variable Cost only)	12,60,000	15,75,000
Average Collection Period	1 Month	2 Months
Average Debtors = $\frac{\text{Cost of Sales} \times \text{Collection Period}}{12}$	1,05,000	2,62,500
Interest on Average Debtors [Average Debtors × 40%]	42,000	1,05,000
Net Benefit (Contribution – Interest)	5,88,000	6,82,500

**Note:** Variable Cost Approach has been applied here. Alternatively, Total Cost Approach may also be applied.

Conclusion: The Company may choose the proposed policy to maximize Net Benefit.

**Solution 19:**

Particulars	Present (₹)	Proposed Policy (₹)
Sales Quantity	60,000 units	60,000 + 25% = 75,000 units
Sales Value at ₹ 100 p.u.	60,000 × 100 = 60,00,000	75,000 × 100 = 75,00,000
Less: Variable Costs at ₹ 80 p.u.	60,000 × 80 = 48,00,000	75,000 × 80 = 60,00,000
<b>Contribution</b>	<b>12,00,000</b>	<b>15,00,000</b>
Less: Fixed Costs at ₹ 10 p.u. of present sales	60,000 × 10 = 6,00,000	60,000 × 10 = 6,00,000
<b>Profit</b>	<b>6,00,000</b>	<b>9,00,000</b>
Cost of Debtors p.a. = Total Cost (VC + FC)	54,00,000	66,00,000
Average Collection Period	1 month	2 months
Average Debtors = $\frac{\text{Cost of Sales} \times \text{Collection Period}}{12}$	4,50,000	11,00,000
Interest on Average Debtors at 20%	90,000	2,20,000
<b>Net Benefit (Profit – Interest)</b>	<b>5,10,000</b>	<b>6,80,000</b>

**Conclusion:** There is an increase in Net Benefit by ₹ 1,70,000. So, the relaxation of credit standards is justified.

**Solution 23:****Evaluation of Credit****Policy Working Notes:****1. Calculation of Cash Discount**

Cash Discount = Total credit sales × % of customers who take up discount × Rate

Present Policy = {12,00,000 × 0.50 × 0.01} = ₹ 6000

Proposed Policy = 16,00,000 × 0.80 × 0.02 = ₹ 25,600

**2. Opportunity Cost of Investment in Receivables**

Present Policy = 9,36,000 × (30/360) × (70% of 15)/100 = 78,000 × 10.5/100 = ₹ 8,190

Proposed Policy = 12,48,000 × (20/360) × 10.50/100 = ₹ 7,280

**Statement showing Evaluation of Credit Policies**

Particulars	Present Policy	Proposed Policy
Credit Sales	12,00,000	16,00,000
Variable Cost @ 78% of sales	9,36,000	12,48,000
Bad Debts @ 1.5% and 2%	18,000	32,000
Cash Discount	6,000	25,600
Profit before tax	2,40,000	2,94,400
Tax @ 30%	72,000	88,320
Profit after Tax	1,68,000	2,06,080
Opportunity Cost of Investment in Receivables	8,190	7,280
Net Profit	1,59,810	1,98,800

**Advise:** Proposed policy should be adopted since the net benefit is increased by (₹ 1,98,800 – 1,59,810) ₹ 38,990.

[Note: Opportunity cost of investment in receivables can be computed alternatively taking contribution @ 22 percent into consideration. The net benefit then would change accordingly to ₹ 1,95,137.]