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CHAPTER

Receivables and Payables Management

THEORY

Meaning of Receivables	❑ When a firm sells its products or provide any service on credit, account receivables are created. ❑ Receivables, also termed as trade credit or sundry debtors are component of current assets.
Objective of Receivables Management	❑ The basic objective of receivables management is to optimize the return on investment on these assets known as receivables. ❑ If large amounts are tied up in receivables than there are chances of bad debts and there will be cost of collection of debts as well. ❑ On the other hand, if investment in sundry debtors is low, the sales may be restricted, since the competitors may offer more liberal terms. ❑ Therefore, proper management of receivables is an important issue and requires proper policies and their implementation.
Cost Associated with Management of Receivables	❑ Defaulting cost or Bad Debts ❑ Administrative cost ❑ Capital or Interest or opportunity cost ❑ Discount cost
Credit Analysis	❑ It determines the degree of risk associated with the capacity of the customer to borrow and his ability and willingness to pay. For this, firm has to ascertain the credit rating of prospective customers.
Credit Policies	❑ It is defined as the set of parameters and principles that govern the extension of credit to customers. ❑ It involves a trade-off between the profits on additional sales that arise due to credit being extended on the one hand and the cost of carrying those debtors and bad debts on the other hand.

Factors Determining Credit Policy	❑ Quantum of sales e.g. credit may be allowed only on bulk quantity ❑ Nature of product e.g. if demand is inelastic, credit period may be small ❑ Cash discount ❑ Firm's policy and practice of collection ❑ Funds available with the firm ❑ Possibility of bad debts
Costs Associated with Credit Policy	❑ **Collection Cost –** It is the administrative costs incurred in collecting the receivables from the customers to whom the credit sales have been made. ❑ **Capital Cost –** It is the finance cost which has to be incurred on the accounts receivables. ❑ **Delinquency Cost –** This cost arises out of the failure of the customers to meet their obligations when payment on credit sales becomes due after the expiry of the credit period. ❑ **Default Cost –** The firm may not be able to recover some of the overdues because of the inability of the customers.
Benefits Associated with Credit Policy	❑ Due to liberal credit policy there will be increase in sales and thus more profits. ❑ Due to strict credit policy there will be decreased cost of bad debts and carrying cost of investment in account receivables.
Credit Terms	❑ It refers to the set of conditions under which credit is given to customers. ❑ The credit terms include the length of the period for which the credit will be provided, the interest rate to be charged and the cost of default while collecting the payments. ❑ It can be used as a dynamic instrument to increase sales.
Components of Credit Terms	(*a*) **Credit period –** The point of time at which the credit extended becomes due and the amount must be paid by the customer. (*b*) **Cash discount –** By what amount the overdue amount gets reduced. (*c*) **Cash discount period –** It refers to the duration during which the cash discount can be availed off.
Lengthening of Credit Period	❑ It pushes sales up by inducing existing customers to purchase more and attracting customers. ❑ It is accompanied by a larger investment in debtors and a higher incidence of bad debts loss.
Shortening of Credit Period	It tends to lower sales, decrease investment in debtors and reduce the incidence of bad-debts loss.
Cash Discount Policy	In case of cash discount, the incremental benefits arising out of additional sales and the reduction in the cost of funds locked up in the form of receivables have to be compared with the amount to be paid in the form of discount and a decision to provide or liberalize cash discount has to be taken only when the incremental net benefit is positive.

Implicit Annual Rate of Cash Discount	$\left(\frac{\text{Discount on } 100}{100 - \text{Cash Discount}}\right) \times \left(\frac{365}{\text{Period of Prepayment}}\right) \times 100$
Ageing Schedule of Receivables	❑ The ageing schedule classifies the outstanding receivables at a given point of time into different age groups together with percentages of total receivables that fall in each group. ❑ The age group represents the number of days or weeks the receivable become outstanding. ❑ The older the receivable, the lower the quality and higher the chances of default.
Benefits of Ageing Schedule	❑ It provides a kind of an early warning proclaiming: ❍ Deterioration of quality of receivables ❍ Where to apply the corrective action ❑ It helps in analyzing the collection policy, procedures etc. by comparing the present period ageing schedule with past period ageing schedule. ❑ It directly points out those customers which require special attention. It helps to recognize increase & slumps in sale.
Pledging	❑ It refers to the use of firm's receivables to secure a short term loan. ❑ The lender scrutinizes the quality of the accounts receivables, selects acceptable accounts, creates a lien on the collateral and fixed the percentage of financing receivables which ranges around 50% to 90%. ❑ The major advantage of pledging accounts receivables is the ease and flexibility it provides to the borrower. ❑ This however, suffers on account of high cost of financing.
Factoring	❑ It involves provision of specialized services relating to credit investigation, collection of debts, credit protection etc. ❑ In factoring accounts receivables are generally sold to a Financial Institution who charges commission and bears the credit risks associated with the accounts receivables purchased by it. ❑ Factoring agreement can be either on a recourse basis or non-recourse basis.
Advantages of Factoring	❑ The firm can convert accounts receivables into cash without bothering about repayment ❑ Factoring ensures a definite pattern of cash inflows for the organization ❑ Continuous factoring virtually eliminates the need for the credit department ❑ Unlike an unsecured loan, compensating balances are not required in this case.
Forfaiting	❑ Forfaiting is a method through which an exporter sells their bills receivables or trade receivables from export of goods or services to obtain cash on non-recourse basis. ❑ It is a unique credit facility arrangement where an overseas buyer (importer) can open a "letter of credit" (or other negotiable instruments) in favour of the exporter and can import goods and services on deferred payment terms.

Features of Forfaiting	❑ Increase of export ❑ Credit for buyer ❑ Reduced cost ❑ Competition
Functions of Forfaiting	❑ Exporter sells goods or services to an overseas buyer. ❑ The overseas buyers i.e. the importer on the basis trade bills and import documents draws a letter of credit (or other negotiable instruments) through its bank (known as importer's bank). ❑ The exporter on receiving the letter of credit (or other negotiable instruments) approaches to its bank (known as exporter's bank). ❑ The exporter's bank buys the letter of credit (or other negotiable instruments) 'without recourse basis' and provides the exporter the payment for the bill.
Five Traditional Cs in Evaluation of Credit Worthiness of Potential Customer	**(a) Capital –** It refers to the financial position of the customer. Various financial ratios are calculated to ascertain the repayment capacity of the customer. **(b) Character –** It determines the willingness of the customer to discharge debt. Various financial institutions/agencies from where the customer has already borrowed funds or availed credit facilities may be contacted. **(c) Collateral –** It determines the security offered by the customer to avail credit facility. The ability to offer security by a firm can be assessed from the financial statement of the firm. **(d) Capacity –** It refers to the ability of the customer to manage business. It also reflects plant capacity i.e., whether the technology of the firm can adapt itself to the rapid changes occurring in the external environment. **(e) Condition –** It refers to the changes in economic conditions which may have an impact on the payment capacity of the customer.
Innovation in Receivables Management	❑ **Re-engineering Receivable Process** ❍ Centralization ❍ Alternate payment strategies such as direct debit, IVR, lock box system etc. ❍ Customer orientation ❑ **Evaluation of risk** ❑ **Use of Latest Technology** ❑ **Receivable collection practices** ❑ **Use of financial tools and techniques** ❍ Credit rating ❍ Decision tree analysis ❍ Control of receivables ❍ Collection policy
Management of Payables	Trade credit is a credit availed by a business organization when it purchases goods without making payment in cash. The credit period begins on the receipt of goods and stretches till the payment is made thereof.

Costs of Trade Credit	**(a) Loss of Cash discount -** There is often a discount on the price that the firm undergoes when it uses trade credit, since it can take advantage of the discount only if it pays immediately. This discount can translate into a high implicit cost. **(b) Loss of goodwill -** If the credit is overstepped, suppliers may discriminate against delinquent customers if supplies become short. As with the effect of any loss of goodwill, it depends very much on the relative market strengths of the parties involved. **(c) Administrative and accounting costs –** Management of creditors involves administrative and accounting costs that would otherwise be incurred. **(d) Conditions imposed by suppliers –** sometimes most of the suppliers insist that for availing the credit facility the order should be of some minimum size or on regular basis.
Benefits of Trade Credit	**(a) Impact of Inflation –** The debtors get a benefit that they have purchased goods on credit and gained on the value of inventory purchased by them due to high inflation rate. **(b) Interest –** Trade credit is a type of interest free loan, therefore failure to avail this facility has in interest cost. This cost is further increased if interest rates are higher.
Computation of Cost of Payables	Implicit Annual Rate of Cash discount (on an annual basis) $\left(\frac{\text{Discount on 100}}{\text{100 - Cash Discount}}\right)\times\left(\frac{365}{\text{Period of Prepayment}}\right)\times 100$ Implicit Annual Rate of Cash discount (if compounding effect is considered) $=\left(\frac{100}{\text{100 - Cash Discount}}\right)^{\left(\frac{365}{\text{Period of Prepayment}}\right)}-1$

PRACTICAL QUESTIONS

1. SK Ltd. has a present annual sales level 10,000 units at ₹300 per unit. The variable cost is ₹200 per unit and the fixed costs amount to ₹3,00,000 per annum. The present credit period allowed by the company is 1 month. The company is considering a proposal to increase the credit period to 2 months or 3 months and has made the following estimates:

	Existing	Proposed	
Credit Policy	1 month	2 months	3 months
Increase in sales	–	15%	30%
% of Bad Debts	1%	3%	5%

There will be increase in fixed cost by ₹50,000 on account of increase in sales beyond 25% of present level. The company plans on a pre-tax return of 20% on investment in receivables. You are required to calculate the most paying credit policy for the company.

[**Sol.** Incremental benefit = ₹28,167; (–)₹24,167]

2. A trader whose current sales are in the region of ₹6 lakhs per annum and an average collection period of 30 days wants to pursue a more liberal policy to improve sales. A study made by a management consultant reveals the following information:

Credit Policy	Increase in Collection Period	Increase in Sales	Present Default Anticipated
A	10 days	₹30,000	1.5%
B	20 days	₹48,000	2%
C	30 days	₹75,000	3%
D	45 days	₹90,000	4%

The selling price per unit is ₹3. Average cost per unit is ₹2.25 and variable costs per unit are ₹2. The current bad debt loss is 1%. Required return on additional investment is 20%. Assume a 360 days year. Analyse which of the above policies would you recommend for adoption?

[**Sol.** Incremental benefit = ₹3,606; ₹3,151; ₹1,583; (–)₹5,350]

3. SK corporation is considering relaxing its present credit policy and is in the process of evaluating two proposed policies. Currently, the firm has annual credit sales of ₹50 lakhs and accounts receivable turnover ratio of 4 times a year. The current level of loss due to bad debts is ₹1,50,000. The firm is required to give a return of 25% on the investment in new accounts receivables. The company's variable costs are 70% of the selling price. Given the following information, which is the better option?

	Present Policy	Policy I	Policy II
Annual credit sales	50,00,000	60,00,000	67,50,000
Accounts Receivables turnover ratio	4 times	3 times	2.4 times
Bad debts losses	1,50,000	3,00,000	4,50,000

[**Sol.** Incremental benefit = ₹18,750; (–)₹48,438]

4. SK Limited specializes in the manufacture of a computer component. The component is currently sold for ₹1,000 and its variable cost is ₹800. For the year 31.12.20 the company sold on an average 400 components per month. At present the company grants one month credit to its customers. The company is thinking of extending the same to two months on account of which the following is expected:

Increase in sales 25%
Increase in stock ₹2,00,000
Increase in creditors ₹1,00,000

You are required to advise the company on whether or not to extend the credit terms if:

(*a*) All customers avail the extended credit period of two months

(*b*) Existing customers do not avail the extended credit terms but only the new customers avail the same. Assume this case the entire increase in sales is attributable to the new customers.

The company expects a minimum return of 40% on the investment.

[Sol. (*a*) Incremental benefit = ₹8,000; (*b*) Incremental benefit = ₹1,36,000]

5. A firm has a current sales of ₹2,56,48,750. The firm has unutilized capacity. In order to boost its sales, it is considering the relaxation in its credit policy. The proposed terms of credit will be 60 days credit against the present policy of 45 days. As a result, the bad debts will increase from 1.5% to 2% of sales. The firm's sales are expected to increase by 10%. The variable operating costs are 72% of the sales. The firm's corporate tax rate is 35%, and it requires an after tax return of 15% on its investment. Should the firm change its credit period to 60 days.

[**Sol.** Incremental benefit = ₹1,88,518]

6. Mr. S is regular customers of SK Ltd. and have approached the sellers for extension of a credit facility for enabling them to purchase goods from SK Ltd. On an analysis of past performance and on the basis of information supplied, the following pattern of payment schedule emerges in regard to Mr. S:

Schedule	Pattern
At the end of 30 days	15% of the bill
At the end of 60 days	34% of the bill
At the end of 90 days	30% of the bill
At the end of 100 days	20% of the bill
Non-recovery	1% of the bill

Mr. S want to enter into a firm commitment for purchase of goods of ₹15 lakhs in 2021, deliveries to be made in equal quantities on the first day of each quarter in the calendar year. The price per unit of commodity is ₹150 on which a profit of ₹5 per unit is expected to be made. It is anticipated by SK Ltd., that taking up of this contract would mean an extra recurring expenditure of ₹5,000 per annum. If the opportunity cost of funds in the hands of SK Ltd. is 24% per annum would you as the finance manager of the seller recommend the grant of credit to Mr. S? Workings should form part of your answer. Assume year of 360 days.

[**Sol.** Incremental benefit = (–)₹39,743]

7. As a part of the strategy to increase sales and profits, the sales manager of a company proposes to sell goods to a group of new customers with 10% risk of non-payment. This group would require one and a half months credit and is likely to increase sales by ₹1,00,000 p.a. Production and Selling expenses amount to 80% of sales and the income-tax rate is 50%. The company's minimum required rate of return (after tax) is 25%. Should the sales manager's proposal be accepted? Analyse.

Also compute the degree of risk of non-payment that the company should be willing to assume if the required rate of return (after tax) were (i) 30%, (ii) 40% and (iii) 60%.

[**Sol.** Incremental benefit = ₹1,200; (i) 14%; (ii) 12%; (iii) 8%]

8. A firm sells 40,000 units of its product per annum @ ₹35 per unit. The average cost per unit is ₹31 and the variable cost per unit is ₹28. The average collection period is 60 days. Bad debts losses are 3% of sales and the collection charges amount to ₹15,000.

The firm is considering a proposal to follow a stricter collection policy which would reduce bad debt losses to 1% of sales and the average collection period to 45 days. It would however, reduce sales volumes by 1,000 units and increase the collection expenses to ₹25,000. The firm's required rate of return is 20%. Would you recommend the adoption of the new collection policy? Assume 360 days in a year for the purpose of your calculation.

[**Sol.** Incremental benefit = ₹22,383]

9. A supplier offers credit to a company under terms of 2/20 net 60. Find the implicit cost of credit.

[**Sol.** 18.62%]

10. The present credit terms of S company are 1/10 net 30. Its annual sales are ₹80,00,000, its average collection period is 20 days. Its variable costs and average total costs to sales are 0.85 and 0.95 respectively and its cost of capital is 10%. The proportion of sales on which customers currently take discount is 0.5. S company is considering relaxing its discount terms to 2/10 net 30. Such relaxation is expected to increase sales by ₹5,00,000, reduce the average collection period to 14 days and increase the proportion of discount sales to 0.8. What will be the effect of relaxing the discount policy on company's profit? Take year as 360 days.

[**Sol.** Incremental benefit = (–)₹9,986]

11. A company currently has ₹10,00,000 per annum of sales, all on credit terms 60 days. The average credit taken is, however 80 days. It is considering offering a discount of 3% within 7 days, and it expects that 60% of existing customers will take the discount. The remainder will be equally split between those paying in 80 days and those paying in 100 days. The new credit terms of discount are also expected to generate an additional ₹50,000 of sales. Variable costs are 80% of sales price and the company's bank overdraft costs 14% (year may be taken consisting of 365 days). The company wishes to know whether offering the discount is worthwhile if:

(*a*) No new sales are obtained

(*b*) New sales are as described above

[**Sol.** Incremental benefit = (*a*) (–)₹5,788; (*b*) ₹2,696]

12. A bank is analysing the receivables of SK Company in order to identify acceptable collateral for a short-term loan. The company's credit policy is 2/10 net 30. The bank lends 80% on accounts where customers are not currently overdue and where the average payment period does not exceed 10 days past the net period. A schedule of SK's receivables has been prepared. How much will the bank lend on pledge of receivables, if the bank uses a 10% allowance for cash discount and returns?

Account	Amount (₹)	Days outstanding in days	Average payment period historically
74	25,000	15	20
91	9,000	45	60
107	11,500	22	24
108	2,300	9	10
114	18,000	50	45
116	29,000	16	10
123	14,000	27	48
	1,08,800		

[**Sol.** ₹48,816]

13. A factoring firm has credit sales of ₹360 lakhs and its average collection period is 30 days. The financial controller estimates, bad debt losses are around 2% of credit sales. The firm spends ₹1,40,000 annually on debtors administration. This cost comprises of telephonic and fax bills along with salaries of staff members. These are the avoidable costs. A factoring firm has offered to buy the firm's receivables. The factor will charge 1% commission and will pay an advance against receivables on an interest @15% p.a. after withholding 10% as reserve. Analyse what should the firm do? Assume 360 days in a year.

[**Sol.** Net Benefit = ₹99,500]

14. A company is considering to engage a factor. The following information is available:

- The current average collection period for the company's debtors is 90 days and ½% of debtors default. The factor has agreed to pay money due after 60 days and will take the responsibility of any loss on account of bad debts.
- The annual charge for factoring is 2% of turnover. Administration cost saving is likely to be ₹1,00,000 per annum.
- Annual credit sales are ₹1,20,00,000. Variable cost is 80% of sales price. The company's cost of borrowing is 15% per annum. Assume 360 days in a year.
- Should the company enter into a factoring agreement?

[**Sol.** Net benefit = ₹40,000]

15. The turnover of SK Ltd. is ₹120 lakhs of which 75% is on credit. The variable cost ratio is 80%. The credit terms are 2/10, net 30. On the current level of sales, the bad debts are 1%. The company spends ₹1,20,000 per annum on administering its credit sales. The cost includes salaries of staff who handle credit checking, collection etc. these are avoidable costs. The past experience indicates that 60% of the customers avail of the cash discount, the remaining customers pay on an average 60 days after the date of sale.

The book debts (receivables) of the company are presently being financed in the ratio of 1:1 by a mix of bank borrowings and owned funds which cost per annum 15 per cent and 14 per cent respectively.

A factoring firm has offered to buy the firm's receivables. The main elements of such deal structured by the factor are:

(*a*) Factor reserve, 12 per cent
(*b*) Guaranteed payment – 25 days
(*c*) Interest charges, 15 per cent, and
(*d*) Commission 4% of the value of receivables

What advice would you give to SK Ltd. – whether to continue with the in-house management of receivables or accept the factoring firm's offer? Assume 360 days in a year.

[**Sol.** Total cost of in-house = ₹4,26,750; Cost of factoring = ₹4,53,516]

16. The Alliance Ltd. a Petrochemical sector company had just invested huge amount in its new expansion project. Due to huge capital investment, the company is in need to an additional ₹1,50,000 in working capital immediately. The finance Manager has determined the following three feasible sources of working capital funds:

(i) Bank Loan: The company's bank will lend ₹2,00,000 at 15%. A 10% compensating balance will be required, which otherwise would not be maintained by the company.

(ii) Trade Credit: The company has been offered credit terms from its major supplier of 3/30, net 90 for purchasing raw materials worth ₹1,00,000 per month.

(iii) Factoring: A factoring firm will buy the company's receivables of ₹2,00,000 per month, which have a collection period of 60 days. The factor will advance up to 75% of the face value of the receivables at 12% on an annual basis. The factor will also charge commission of 1% on all receivables purchased. It has been estimated that the factor's services will save the company a credit department expenses and bad debt expense of ₹1,250 and ₹1,750 per month respectively.

On the basis of annual percentage cost, advise which alternative should the company select? Assume 360 days year.

[**Sol.** Bank loan = 16.67%; Trade credit = 18.56%; Factoring = 20%]

17. Suppose SK Ltd. has been offered credit terms from its major supplier of 2/10, net 45. Hence the company has the choice of paying ₹98 per ₹100 or to invest the ₹98 for an additional 35 days and eventually pay the supplier ₹100 per ₹100. The decision as to whether the discount should be accepted depends on the opportunity cost of investing ₹98 for 35 days. What should the company do?

[**Sol.**]

18. The SK Company purchases raw materials on terms of 2/10, net 30. A review of the company's records by the owner, Mr. S, revealed that payments are usually made 15 days after purchases are made. When asked why the firm did not take advantage of its discounts, the accountant, Mr. M, replied that it cost only 2 per cent of these funds, whereas a bank loan would cost the company 12 percent.

(*a*) Analyse what mistake is Mr. M making?

(*b*) If the firm could not borrow from the bank and was forced to resort to the use of trade credit funds, what suggestion might be made to Mr. M that would reduce the annual interest cost? Identify.

[**Sol.**]

PRACTICE QUESTIONS

19. SK Ltd. is examining the question of relaxing its credit policy. It sells at present 20,000 units at a price of ₹100 per unit, the variable cost per unit ₹88 and average cost per unit at the current sales volume is ₹92. All the sales are on credit, the average collection being 36 days. A relaxed credit policy is expected to increase sales by 10% and the average age of receivables to 60 days. Assuming 15% return, should the firm relax its credit policy?

[**Sol.** Incremental gain = ₹1,200]

20. A company currently has an annual turnover of ₹50 lakhs and an average collection period of 30 days. The company wants to experiment with a more liberal credit policy on the ground that increase in collection period will generate additional sales. From the following information, kindly indicate which policy the company should adopt:

Credit policy	Average collection period	Annual Sales (₹lakhs)
S	45 days	56
K	60 days	60
M	75 days	62
P	90 days	63

Costs: Variable cost – 80% of sales; Fixed cost: ₹6 lakhs per annum: Required (pre-tax) return on investment: 20%. A year may be taken to comprise of 360 days.

[**Sol.** Incremental benefit = ₹69,667; ₹96,667; ₹85,000; ₹54,667]

21. SK limited has current sales of ₹15 lakhs per year. Cost of sales is 75 per cent of sales and bad debts are one per cent of sales. Cost of sales comprises 80 per cent variable costs and 20 per cent fixed costs, while the company's required rate of return is 12 per cent. SK Limited currently allows customers 30 days credit, but is considering increasing this to 60 days credit in order to increase sales.

It has been estimated that this change in policy will increase sales by 15 per cent, while bad debts will increase from one percent to four percent. It is not expected that the policy change will result in an increase in fixed costs and creditors and stock will be unchanged. Should SK Limited introduce the proposed policy? Analyse by assuming 360 days a year.

[**Sol.** Incremental benefit = ₹22,050]

22. XYZ Ltd. is making a turnover of ₹70 lakhs out of which 60% is made on credit. The company allows credit for 30 days. The company is considering proposals to liberalize the credit policy. Information regarding options available are as under:

	Proposal-A	Proposal-B
Credit Period	45 days	60 days
Anticipated credit sales	₹65 lakhs	₹80 lakhs

The product yield an average contribution of 20% on sales. Fixed costs are ₹6 lakh per annum. The company expects a pre-tax return of 18% on capital employed. At present company makes a provision for bad debts @0.5% which is expected to go upto 1% for Proposal-A and 2% for Proposal-B. Assume 360 days in a year.

Evaluate the proposals and give your recommendations.

[**Sol.** Incremental benefit = ₹3,44,900; ₹4,70,400]

23. TM Limited, a manufacturer of colour TV sets is considering the liberalization of existing credit terms to three of their large customers A, B and C. The credit period and likely quantity of TV sets that will be sold to the customers in addition to other sales are as follows:

Quantity sold (No. of TV Sets)

Credit Period (days)	A	B	C
0	10,000	10,000	–
30	10,000	15,000	–
60	10,000	20,000	10,000
90	10,000	25,000	15,000

The selling price per TV set is ₹15,000. The expected contribution is 50% of the selling price. The cost of carrying receivable averages 20% per annum.

You are required to compute the credit period to be allowed to each customer.

(Assume 360 days in a year for calculation purposes).

[**Sol.** Benefit = ₹750; 1,106.25; ₹1,406.25; ₹1,781.25; Nil; Nil; ₹725; ₹1,068.75]

24. SK Ltd. has sales of ₹960 lakhs. Selling price per unit is ₹80 and variable operating cost is 75% of selling price and average cost per unit is ₹70. The cost of funds is 12%. Average collection period is 75 days, bad debt losses are 4% of sales and collection expenses are ₹15.60 lakhs. Company is considering whether collection policies should be made strict. Due to rigorous collection procedures, sales are expected to decline to ₹920 lakhs. Average collection period will reduce to 60 days and bad debts will reduce to 2.5% of sales. Annual collection expenses will increase to ₹22.50 lakhs.

Required: Should the company carry out the proposal?

(Assume 360 days in a year and investment in debtors are calculated on total cost)

[**Sol.** Incremental benefit = ₹3,30,000]

25. Current annual sales of SKD Ltd. is ₹360 lakhs. Its directors are of the opinion that company's current expenditure on receivables management is too high and with a view to reduce the expenditure they are considering following two new alternative credit policies:

	Policy X	Policy Y
Average collection period	1.5 months	1 month
% of default	2%	1%
Annual collection expenditure	₹12 lakhs	₹20 lakhs

Selling price per unit of product is ₹150. Total cost per unit is ₹120.

Current credit terms are 2 months and percentage of default is 3%.

Current annual collection expenditure is ₹8 lakhs. Required rate of return on investment of SKD Ltd. is 20%. Determine which credit policy SKD Ltd. should follow.

[**Sol.** Incremental benefit = ₹2,00,000; Nil]

26. MN Ltd. has a current turnover of ₹30,00,000 p.a. Cost of sales is 80% of turnover and Bad Debts are 2% of turnover, cost of sales includes 70% variable cost and 30% fixed cost, while company's required rate of return is 15%. MN Ltd. currently allows 15 days credit to its customer, but it is considering increase this to 45 days credit in order to increase turnover. It has been estimated that this change in policy will increase turnover by 20%, while Bad Debts will increase by 1%. It is not expected that the policy change will result in an increase in fixed cost and creditors and stock will be unchanged.

Should MN Ltd. introduce the proposed policy? (Assume a 360 days year)

[**Sol.** Incremental benefit = ₹1,79,700]

27. SK Ltd. having an annual sales of ₹30 lakhs, is re-considering its present collection policy. At present, the average collection period is 50 days and the bad debt losses are 5% of sales. The company is incurring an expenditure of ₹30,000 on account of collection of receivables. Cost of funds is 10 percent. The alternative policies are as under:

	Alternative I	Alternative II
Average collection period	40 days	30 days
Bad Debt losses	4% of sales	3% of sales
Collection expenses	₹60,000	₹95,000

Determine the alternatives on the basis of incremental approach and state which alternative is more beneficial.

[**Sol.** Incremental benefit = ₹8,333; ₹11,667]

28. A company is presently having credit sales of ₹12 lakh. The existing credit terms are 1/10, net 45 days and average collection period is 30 days. The current bad debts loss is 1.5%. in order to accelerate the collection process further as also to increase sales, the company is contemplating liberalization of its existing credit terms to 2/10, net 45 days. It is expected that sales are likely to increase by 1/3 of existing sales, bad debts increase to 2% of sales and average collection period to decline to 20 days. The contribution to sales ratio of the company is 22% and opportunity cost of investment in receivables is 15 per cent (pre-tax). 50 percent and 80 percent of customers in terms of sales revenue are expected to avail cash discount under existing and liberalization scheme respectively. The tax rate is 30%. Advise, should the company change its credit terms? (assume 360 days in a year).

[**Sol.** Incremental benefit = ₹38,990]

29. A company has current sale of ₹12 lakhs per year. The profit-volume ratio is 20% and post-tax cost of investment in receivables is 15%. The current credit terms are 1/10, net 50 days and average collection period is 40 days. 50% of customers in terms of sales revenue are availing cash discount and bad debt is 2% of sales.

In order to increase sales, the company want to liberalize its existing credit terms to 2/10, net 35 days. Due to which, expected sales will increase to ₹15 lakhs. Percentage of default in sales will remain same. Average collection period will decrease by 10 days. 80% of customers in terms of sales revenue are expected to avail cash discount under this proposed policy.

Tax rate is 30%. Advise, should the company change its credit terms (assume 360 days in a year).

[**Sol.** Incremental profit = ₹26,200]

30. A factoring firm has offered a company to buy its accounts receivables. The relevant information is given below:

(i) The current average collection period for the company's debt is 80 days and ½% of debtors default. The factor has agreed to pay over money due to the company after 60 days and it will suffer all the losses of bad debts also.

(ii) Factor will charge commission @2%.

(iii) The company spends ₹1,00,000 p.a. on administration of debtor. These are avoidable costs.

(iv) Annual credit sales are ₹90 lakhs. Total variable costs is 80% of sales. The variable costs is 80% of sales. The company's cost of borrowing is 15% per annum. Assume 365 days in a year.

Should the company enter into agreement with factoring firm?

[**Sol.** Net benefit = ₹24,178]

31. A Ltd. is in the manufacturing business and it acquires raw material from X Ltd. on a regular basis. As per the terms of agreement the payment must be made within 40 days of purchase. However, A Ltd. has a choice of paying ₹98.50 per ₹100 it owes to X Ltd. on or before 10th day of purchase.

Required:

EXAMINE whether A Ltd. should accept the offer of discount assuming average billing of A Ltd. with X Ltd. is ₹10,00,000 and an alternative investment yield a return of 15% and company pays the invoice.

[**Sol.** Cheaper to accept the discount]

SOLUTIONS

19. Statement showing evaluation of proposal

Particulars	Amount
Incremental gains	
Contribution (2,000 × 12)	24,000
Total (A)	**24,000**
Incremental Costs	
Opportunity cost of Investment in Debtors	22,800
Total (B)	**22,800**
Incremental Gain (A) – (B)	1,200

Working Note 1: Computation of incremental opportunity cost of Invest in Debtors

Particulars	Existing	Proposal
Variable cost of sales (20,000 × 88) (22,000 × 88)	17,60,000	19,36,000
Fixed cost	80,000	80,000
Total cost of Sales	**18,40,000**	**20,16,000**

Particulars	Existing	Proposal
Average collection period	36 days	60 days
Average invest in Debtors	1,84,000	3,36,000
Incremental invest in debtors		1,52,000
Opportunity cost of incremental invest in debtors		22,800

20. Statement Showing Evaluation of Various Credit Policies under Consideration

Particulars	Policy A	Policy B	Policy C	Policy D
Incremental gains:				
Contribution (See Working Note 1)	1,20,000	2,00,000	2,40,000	2,60,000
Total (A)	**1,20,000**	**2,00,000**	**2,40,000**	**2,60,000**
Incremental costs:				
Opportunity cost of Investment in debtors	50,333	1,03,333	1,55,000	2,05,333
(See working note 2)	50,333	1,03,333	1,55,000	2,05,333
Total (B)	**69,667**	**96,667**	**85,000**	**54,667**
Net incremental Gains (A) – (B)				

Advise: Credit policy B where ACP is 60 days is the best and hence should be accepted

Working notes:

(i) Computation of Incremental Contribution

Particulars	Existing	Policy A	Policy B	Policy C	Policy D
Sales (₹in Lacs)	50	56	60	62	63
Less: Variable cost of sales (80%)	40	44.80	48	49.60	50.40
Contribution	10	11.20	12	12.40	12.60
Incremental Contribution		1.2	2	2.4	2.6

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

Particulars	Existing	Policy A	Policy B	Policy C	Policy D
Total cost of Sales (VC + Total FC)	46,00,000	50,80,000	54,00,000	55,60,000	56,40,000
Average collection period (Days)	30	45	60	75	90
Average Investment in Debtors	3,83,333	6,35,000	9,00,000	11,58,333	14,10,000
Incremental investment in Debtors		2,51,667	5,16,667	7,75,000	10,26,667
Opportunity cost of Inc. invest in Drs		50,333	1,03,333	1,55,000	2,05,333

Advise: Credit policy III should be chosen.

21. Statement showing evaluation of proposal

Particulars	Amount
Incremental gains	
Contribution (15,00,000 × 15% × 40%)	90,000
Total (A)	**90,000**

Particulars	Amount
Incremental Costs	
Increase in bad debts [(17,25,000×4%) – (15,00,000×1%)]	54,000
Opportunity cost of Investment in Debtors	13,950
Total (B)	**67,950**
Incremental Gain (A) – (B)	22,050

Working note 1: Cost of sales = Sales × 75%
Variable cost = 80% × COS = 80% × 75% × Sales = 60% × Sales
Fixed cost = 20% × COS = 20% × 75% × Sales = 15% × Sales = 15% × 15,00,000 = ₹2,25,000
PV Ratio = 100 – VC Ratio = 100 – 60% = 40% of sales
New sales = 15,00,000 + 15% = ₹17,25,000
Working Note 2: Computation of incremental opportunity cost of Invest in Debtors

Particulars	Existing	Proposal
Variable cost of sales (15,00,000 × 60%) (17,25,000 × 60%)	9,00,000	10,35,000
Fixed cost	2,25,000	2,25,000
Total cost of Sales	**11,25,000**	**12,60,000**
Average collection period	30 days	60 days
Average invest in Debtors	93,750	2,10,000
Incremental invest in debtors		1,16,250
Opportunity cost of incremental invest in debtors @ 12%		13,950

22. Statement of Credit Policy Evaluation

Particulars	Proposal-A	Proposal-B
Increase in contribution (working note – 1)	4,60,000	7,60,000
Increase in bad debts	(44,000)	(1,39,000)
Increase in opportunity cost (working note – 2)	(71,100)	(71,100)
Net Benefit	**3,44,900**	**4,70,400**

Net benefit is higher in case of Proposal-B, thus Proposal-B is better.
Working Note - 1

Statement of Contribution Calculation

Particulars	Existing	Policy I	Policy II
Credit Sales	42,00,000	65,00,000	80,00,000
Contribution @ 20%	8,40,000	13,00,000	16,00,000
Increase in contribution	–	4,60,000	7,60,000

Working Note - 2

Statement of Bad Debts Calculation

Particulars	Existing	Policy I	Policy II
Credit Sales	42,00,000	65,00,000	80,00,000
Bad Debts (in %)	0.50%	1%	2%
Bad Debts (in ₹)	21,000	65,000	1,60,000
Increase in bad debts	–	44,000	1,39,000

Working Note - 3

Statement of Opportunity Cost Calculation

Particulars	Existing	Policy I	Policy II
Variable cost (Credit sales × 70%)	33,60,000	52,00,000	64,00,000
Fixed cost	6,00,000	6,00,000	6,00,000
Total cost	39,60,000	58,00,000	70,00,000
Average Credit Period	30 days	45 days	60 days
Average invest. in debtors	3,30,000	7,25,000	11,66,667
Increase in invest. in debtors	–	3,95,000	8,36,667
Inc. in opportunity cost @ 20%	–	71,100	1,50,600

23 In case of customer A, there is no increase in sales even if the credit is given. Hence comparative statement for B and C is given below:

Particulars	Customer B				Customer C			
Credit Period	0	30	60	90	0	30	60	90
Sales units	10,000	15,000	20,000	25,000	–	–	10,000	15,000
	₹in lakhs				₹in lakhs			
Sales value	1,500	2,250	3,000	3,750	–	–	1,500	2,250
Contribution @ 50% (A)	750	1,125	1,500	1,875	–	–	750	1,125
Debtors $\left(\frac{\text{Credit period} \times \text{Sales } 360}{360}\right)$	–	187.5	500	937.5	–	–	250	562.5
Debtors at cost	–	93.75	250	468.75	–	–	125	281.25
Cost of carrying debtors @ 20% (B)	–	18.75	50	93.75	–	–	25	56.25
Excess of contribution over carrying debtors (A – B)	750	1,106.25	1,406.25	1,781.25	–	–	725	1,068.75

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 B and C. Hence, credit period of 90 days should be allowed to B and C.

24. Statement of Credit Policy Evaluation

Particulars	Amount (₹)
Decrease in contribution (40,00,000 × 25%)	(10,00,000)
Increase in collection expenses (22,50,000 – 15,60,000)	(6,90,000)
Decrease in bad debts (working note – 1)	15,40,000
Decrease in opportunity cost (working note – 2)	4,80,000
Net Benefit	**3,30,000**

Since there is net benefit, thus it is recommended to implement the proposed policy.

Working Note – 1

Fixed cost = (960,00,000/80 × 70) – (960,00,000 × 75%) = ₹120,00,000

Statement of Bad Debts Calculation

Particulars	Existing	Proposed
Sales	960,00,000	920,00,000
Bad Debts (in %)	4%	2.5%
Bad Debts (in ₹)	38,40,000	23,00,000
Decrease in bad debts	–	15,40,000

Working Note - 2

Statement of Opportunity Cost Calculation

Particulars	Existing	Proposed
Variable cost (sales × 75%)	720,00,000	690,00,000
Fixed cost	120,00,000	120,00,000
Total cost	**840,00,000**	**810,00,000**
Average credit period	75 days	60 days
Average invest. in debtors	175,00,000	135,00,000
Increase in invest. in debtors	–	40,00,000
Inc. in opportunity cost @ 12%	–	4,80,000

25. **Statement of Credit Policy Evaluation**

Particulars	Policy X	Policy Y
Decrease in bad debts (working note – 1)	3,60,000	7,20,000
Increase in collection expenses	(4,00,000)	(12,00,000)
Increase in opportunity cost (working note – 2)	2,40,000	4,80,000
Net Benefit	**2,00,000**	**0**

Net benefit is higher in case of Policy X, thus Policy X should be followed.

Working Note - 1

Statement of Bad Debts Calculation

Particulars	Existing	Policy X	Policy Y
Sales	360,00,000	360,00,000	360,00,000
Bad Debts (in %)	3%	2%	1%
Bad Debts (in ₹)	10,80,000	7,20,000	3,60,000
Decrease in bad debts	–	3,60,000	7,20,000

Working Note - 2

Statement of Opportunity Cost Calculation

Particulars	Existing	Policy X	Policy Y
Total Cost [360 × (120÷150)]	288,00,000	288,00,000	288,00,000
Average collection period	2 month	1.5 month	1 month
Average invest. in debtors	48,00,000	36,00,000	24,00,000
Decrease in invest. in debtors	–	12,00,000	24,00,000
Dec. in opportunity cost @ 20%	–	2,40,000	4,80,000

26. **Statement of Credit Policy Evaluation**

Particulars	Amount (₹)
Increase in contribution (30,00,000 × 20% × 44%)	2,64,000
Increase in bad debts (working note – 1)	(48,000)
Increase in opportunity cost (working note – 2)	(36,300)
Net Benefit	**1,79,700**

Since there is net benefit, thus it is recommended to implement the proposed policy.

Working Note - 1

Variable cost ratio = 80 × 70% = 56%; P/v Ratio = 100- 56% = 44%

Fixed cost = 30,00,000 × 80% × 30% = ₹7,20,000

Statement of Bad Debts Calculation

Particulars	Existing	Proposed
Sales	30,00,000	36,00,000
Bad Debts (in %)	2%	3%
Bad Debts (in ₹)	60,000	1,08,000
Increase in bad debts	–	48,000

Working Note - 2

Statement of Opportunity Cost Calculation

Particulars	Existing	Proposed
Variable cost (sales × 56%)	16,80,000	20,16,000
Fixed cost	7,20,000	7,20,000
Total cost	24,00,000	27,36,000
Average credit period	15 days	45 days
Average invest. in debtors	1,00,000	3,42,000
Increase in invest. in debtors	–	2,42,000
Inc. in opportunity cost @ 15%	–	36,300

27. **Statement of Credit Policy Evaluation**

Particulars	Policy I	Policy II
Decrease in bad debts (working note – 1)	30,000	60,000
Increase in collection expenses	(30,000)	(65,000)
Increase in opportunity cost (working note – 2)	8,333	16,6667
Net Benefit	**8,333**	**11,667**

Net benefit is higher in case of Policy II, thus Policy II is more viable.

Working Note - 1

Statement of Bad Debts Calculation

Particulars	Existing	Policy I	Policy II
Sales	30,00,000	30,00,000	30,00,000
Bad Debts (in %)	5%	4%	3%
Bad Debts (in ₹)	1,50,000	1,20,000	90,000
Decrease in bad debts	–	30,000	60,000

Working Note - 3

Statement of Opportunity Cost Calculation

Particulars	Existing	Policy I	Policy II
Total Sales	30,00,000	30,00,000	30,00,000
Average collection period	50 days	40 days	30 days
Average invest. in debtors	4,16,667	3,33,333	2,50,000
Decrease in invest. in debtors	–	83,333	1,66,667
Dec. in opportunity cost @ 10%	–	8,333	16,667

28. **Statement of Discount Policy Evaluation**

Particulars	Amount (₹)
Increase in contribution [12,00,000 × 1/3 × 22% × (1 – 0.30)]	61,600
Increase in discount [(16,00,000×0.8×2%)-(12,00,000×.5×1%)](1 – 0.30)	(13,720)
Increase in bad debts [(16,00,000 × 2%) – (12,00,000 × 1.5%)](1 – 0.30)	(9,800)
Decrease in opportunity cost (working note – 1)	910
Incremental Net Benefit/(loss)	(38,990)

It is not advisable to relax the present discount policy because it will reduce the profit by ₹9,986

Working Note:

Particulars	Existing	Proposed
Variable cost	12 lakhs × 0.78 = 9,36,000	16 lakhs × 0.78 = 12,48,000
Fixed cost	–	–
Total Cost	**9,36,000**	**12,48,000**
ACP	30 days	20 days

Particulars	Existing	Proposed
Avg. investment in debtors	78,000	69,333
Dec. in invest. in debtors	–	8,667
Dec. in opportunity cost @ 10.5%	–	910

Opportunity cost rate after tax = 15 × (1 – 0.30) = 10.5%

29. **Statement of Evaluation of Proposal**

Particulars	Amount
Increase in contribution (15,00,000 – 12,00,000)(20%)(1 - 0.30)	42,000
Incremental bad debts [(15,00,000 – 12,00,000)(2%)(1 – 0.30)	(4,200)
Incremental cash discount [(15,00,000×0.80×2%) – (12,00,000×0.50×1%)](1 – 0.30)	(12,600)
Saving in opportunity cost [(15,00,000×0.8×(30÷360)×15%) – (12,00,000×0.8×(40÷360)×15%)]	1,000
Incremental Profit	**26,200**

Proposed policy should be adopted since the net benefit is increased by ₹26,200.

30. Presently, the debtors of the company pay after 80 days. However, the factor has agreed to pay after 60 days only. So, the investment in debtors will be reduced by 20 days. The annual charge in cash flows through entering into a factoring agreement is:

Particulars	₹
Factoring commission (90,00,000 × 2%)	(1,80,000)
Administration cost saved	1,00,000
Bad debts saved (90,00,000 × 0.50%)	45,000
Interest saving [{(90,00,000 × 80/360) – (90,00,000 × 60/360)} × 80% × 15%]	59,178
Net Benefit	**24,178**

Recommended to enter into factoring agreement as it will provide annual benefit of ₹24,178.

31. Annual benefit of accepting the discount $\frac{1.5}{100-1.5}\times\frac{365}{40-10}\times 100 = 18.53\%$

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

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

	If discount is	
	Accepted (₹)	Not accepted (₹)
Payment to supplier	9,85,000	10,00,000
Return on investment of 9,85,000 for 30 days [9,85,000 × (30/365) × 15%]	–	(12,144)
	9,85,000	9,87,856

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