Suggested Solutions to Questions in Intermediate (IPC) Course Practice Manual

Financial Management

Chapter 2: Time Value of Money

Solution to Q1

- Refer Solution to Q1 of Class Work

Solution to Q2

- Refer Solution to Q5 of Class Work

Solution to Q3

- Refer Solution to Q6 of Class Work

Solution to Q4

- Refer Solution of Practice Manual

Solution to Q5

- Refer Solution of Practice Manual

Solution to Q6

- Refer Solution of Q1 of Class Work

Chapter 3: Financial Analysis and Planning

(Chapters : Accounting Ratios, Fund Flow Statements and Cash Flow Statements of J.K. SHAH CLASSES text book)

UNIT:1 APPLICATION OF RATIO ANALYSIS FOR PERFORMANCE EVALUATION, FINANCIAL HEALTH AND DECISION MAKING

SECTION -B

Solution to Q1

Balance Sheet as at 31st March ...

Liabilities	Rs.	Rs.	Assets	Rs.	Rs.
Shareholder's Funds			Fixed Assets		7,20,000
Share Capital	8,00,000				
Reserves and Surplus	1,60,000	9,60,000	Current Assets		
			Stock	2,20,000	
Current Liabilities			Other Current Assets	1,80,000	4,00,000
Bank OD	40,000				
Creditors	1,20,000	1,60,000			
		11,20,000			**11,20,000**

Working Notes

1) *Working Capital = 2,40,000*
   Current Ratio = 2.5 : 1
   W C = C A – C L
   1.5 = 2.5 - 1
   ↓ ↓ ↓
   2,40,000 ? ?

   Therefore, CA = 4,00,000 and CL = 1,60,000

2) *Quick Ratio = 1.5 : 1*
QR = Quick Asset / Quick Liabilities

$$= \frac{CA - Stock - Prepaid\ Expenses}{CL - Bank\ OD}$$

$$1.5 = \frac{4{,}00{,}000 - Stock}{1{,}60{,}000 - 40{,}000}$$

Therefore, Stock = 2,20,000

3) *Fixed Assets : Proprietor's Funds*
0.75 : 1

Proprietors Funds = Fixed Assets + Working Capital

1	=	*0.75*	+	*0.25*
↓		↓		↓
?		*?*		*2,40,000*

Therefore Fixed Assets = 7,20,000
Proprietors Funds = 9,60,000

Accordingly, Share Capital = Proprietors Funds – Reserves and Surplus
= 9,60,000-1,60,000
= 8,00,000

Solution to Q2

- Refer Solution to Question No. 14 of Class Work

Solution to Q3

(i) Inventory Turnover

$$= \frac{COGS}{Average\ Stock}$$

$$= \frac{20{,}860}{\frac{2{,}867 + 2{,}407}{2}}$$

= 7.91 times

(ii) Financial Leverage

$$= \frac{EBIT}{EBT}$$

$$= \frac{170}{57}$$

$$= 2.98$$

(iii) ROCE (before tax)

$$= \frac{\boldsymbol{EBIT}}{\boldsymbol{Average\ Capital\ Employed}}$$

$$= \frac{\mathbf{170}}{\frac{\mathbf{5947 + 4535}}{\mathbf{2}}}$$

$$= \mathbf{3.24}\%$$

(iv) Return on Equity (ROE)

$$= \frac{\boldsymbol{EAT}}{\boldsymbol{Average\ Shareholders\ Funds}}$$

$$= \frac{\mathbf{34}}{\frac{\mathbf{2377 + 1472}}{\mathbf{2}}}$$

$$= \mathbf{1.77}\%$$

(v) Average Collection Period

$$= \frac{\boldsymbol{Average\ Debtors}}{\boldsymbol{Credit\ sales}} * \mathbf{365}$$

$$= \frac{\frac{\mathbf{1168 + 1495}}{\mathbf{2}}}{\mathbf{22165}} * \mathbf{365}$$

$$= \mathbf{22}\ \boldsymbol{days}\ (\boldsymbol{approx})$$

Solution to Q4

Balance Sheet as at 31st March 2016

Liabilities	Rs.	Rs.	Assets	Rs.	Rs.
Shareholder's Funds			Plant and Machinery		4,25,000
Share Capital	4,00,000				
Reserves and Surplus	6,00,000	10,00,000	**Current Assets**		
			Inventory	7,00,000	
Total Debt			Debtors	3,33,333	
Current Liabilities		5,00,000	Cash	41,667	10,75,000
	Total	15,00,000		Total	15,00,000

Working Notes

(i) Net Worth = Share Capital + Reserves and Surplus
= 4,00,000 + 6,00,000
=10,00,000

(ii) Total Debt : Net Worth
1 : 2
↓ ↓
? 10,00,000

Therefore , Total Debt = 5,00,000

(iii) Total Assets = Net Worth + Total Debt
= 10,00,000 + 5,00,000
=15,00,000

(iv) Asset Turnover = 2 times

$$= \frac{Sales}{Total\ Assets}$$

$$2 = \frac{Sales}{15,00,000}$$

Therefore, Sales =30,00,0000

(v) GP Ratio = 30%
Sales = COGS + GP
100 = 70 + 30
↓ ↓ ↓
30,00,000 ? ?

∴ COGS = 21,00,000

(vi) Inventory Turnover = 3 times

$$3 = \frac{COGS}{Inventory}$$

∴ Inventory = 21,00,000/3 = 7,00,000

(vii) Average Collection Period = 40 days

$$40 = \frac{Debtors}{Credit\ sales} * 360$$

∴ Debtors = 30,00,000*40/360

= 3,33,333

(viii) Acid Test Ratio = 0.75

$$0.75 = \frac{CA - Stock}{CL}$$

$$0.75 = \frac{CA - 7,00,000}{5,00,000}$$

∴ CA = 10,75,000

Solution to Q5

(i) $$Quick\ Ratio = \frac{Quick\ Assets}{Quick\ Liabilities}$$

Working Capital = 4,50,000

Current Ratio = 2.5 : 1

W C = C A – C L

1.5 = 2.5 - 1

↓ ↓ ↓

4,50,000 ? ?

Therefore, CA = 7,50,000 and CL = 3,00,000

Total Asset Turnover = 2 times

$$2 = \frac{Sales}{Total\ Assets}$$

$$2 = \frac{Sales}{10{,}00{,}000 + 7{,}00{,}000}$$

∴ Sales = 35,00,000

GP Ratio = 20%

Sales = COGS + GP

100	=	80	+	20
↓		↓		↓
35,00,000		?		?

∴ COGS = 28,00,000

Inventory Turnover = 7 times

$$7 = \frac{COGS}{Average\ Inventory}$$

∴Average Inventory = 28,00,000/7 = 4,00,000

$$Average\ Stock = \frac{Opening\ Stock + Closing\ Stock}{2}$$

$$4{,}00{,}000 = \frac{3{,}80{,}000 + Closing\ Stock}{2}$$

∴ Closing Stock = 4,20,000

$$\therefore QR = \frac{7{,}50{,}000 - 4{,}20{,}000}{3{,}00{,}000}$$

∴ QR= 1.1:1

It is assumed that there are no prepaid expenses and Bank OD

(ii) Fixed Asset Turnover Ratio

$$= \frac{Sales}{Fixed\ Assets}$$

$$= \frac{35{,}00{,}000}{10{,}00{,}000}$$

$$FA\ Turnover = 3.5 times$$

(iii) Proprietary Ratio

$$= \frac{Propreitors\ Funds}{Total\ Assets}$$

$$= \frac{8{,}70{,}000}{10{,}00{,}000 + 7{,}50{,}000}$$

$$= 0.50:1$$

Shareholder Funds + Borrowed Funds = Fixed Assets + Working Capital

1.5	+	1	=	2.5
↓		↓		↓
?		?		10,00,000+4,50,000

∴ Shareholders Funds = 8,70,000

∴ Borrowed Funds = 5,80,000

(iv) Earnings per Share

$$= \frac{Earnings\ for\ Equity\ Shareholders}{no\ of\ equity\ shares}$$

$$= \frac{2{,}62{,}500}{60{,}000}$$

$$= 4.075$$

ROA (after tax) = 15%

$$= \frac{EBIT(1 - Tax\ Rate)}{Assets}$$

Since Interest rate is not given EBIT and EBT will be same and EBT(1-tax rate) = EAT

$$15 = \frac{EAT}{17{,}50{,}000} * 100$$

∴ EAT = 2,62,500

Accordingly Earnings for ESH= EAT – Preference Dividend

= 2,62,500 – 18,000

=2,44,500

(v) PE Ratio

$$= \frac{MPS}{EPS}$$

$$= \frac{16}{4.075}$$

$$= 3.93 times$$

Solution to Q6

Balance Sheet as at 31st March ...

Liabilities	Rs.	Rs.	Assets	Rs.	Rs.
Creditors		60,000	Cash		42,000
Long term Debt		2,40,000	Debtors		12,000
Shareholders Funds		6,00,000	Inventory		54,000
			Fixed Assets		7,92,000
	Total	9,00,000		Total	9,00,000

Working Notes

(i) Long Term Debt : Equity

0.4 : 1

↓ ↓

? 6,00,000

∴ Long Term Debt = 2,40,000

(ii) GP Ratio = 20%

$$20 = \frac{GP}{Sales} * 100$$

$$20 = \frac{54000}{Sales} * 100$$

∴ Sales = 2,70,000

∴Credit Sales= 2,70,000*80%

= 2,16,000

(iii) Total Asset turnover – 0.3 times

$$0.3 = \frac{Sales}{Total\ Assets}$$

$$0.3 = \frac{2,70,000}{Total\ Assets}$$

∴ Total Assets = 9,00,000

∴ Creditors = Total Assets – Equity- Long term Debt

= 9,00,000 – 6,00,000- 2,40,000

= 60,000

(iv) Inventory Turnover = 4 times

$$4 = \frac{COGS}{Inventory}$$

$$4 = \frac{2{,}70{,}000 * 80\%}{Inventory}$$

∴ Inventory = 54,000

(v) Average Collection Period = 20days

$$20 = \frac{Debtors}{Credit\ sales} * 360$$

∴ Debtors = 2,16,000*20/360
= 12000

(vi) Current Ratio = 1.8 : 1
∴Current Assets = 1.8* 60,000
Current Asset = 1,08,000
∴ Cash = CA- Stock- Debtors = 1,08,000-54,000-12,000=66,000.

Solution to Q7

- Refer Solution to Q3 of Class Work

Solution to Q8

Total Sales = 30,00,000

Cash Sales = 25% of Credit Sales

GP Ratio = 25%

∴COGS = 75%

∴COGS = 30,00,000* 75% = 22,50,000

(i) Average Inventory

$$Inventory\ turnover = \frac{COGS}{Average\ Stock}$$

$$6 = \frac{22{,}50{,}000}{Average\ Stock}$$

∴ Average Stock = 3,75,000

(ii) Purchases

$$Average\ Stock = \frac{Opening\ Stock + Closing\ Stock}{2}$$

Let Opening Stock be x. ∴ Closing Stock will be x+80,000

$$3{,}75{,}000 = \frac{x + x + 80{,}000}{2}$$

∴ Opening Stock = 3,35,000 and Closing Stock = 4,15,000

Opening Stock + Purchases – Closing Stock = COGS

3,35,000+Purchases – 4,15,000 = 22,50,000

∴ Purchases = 23,30,000

∴ Credit Purchases = 23,30,000-3,30,000=20,00,000

(iii) Average Debtors

$$Debtors\ turnover = \frac{Cr.Sales}{Average\ Debtors}$$

$$8 = \frac{24{,}00{,}000}{Average\ Debtors}$$

∴ Average Debtors = 24,00,000/8 = 3,00,000

Cash Sales + Credit Sales = Total Sales

↓	↓	↓
25	100	125
↓	↓	↓
?	?	30,00,000

∴ Credit Sales = 24,00,000 and Cash Sales = 6,00,000

(iv) Average Creditors

$$Creditors\ turnover = \frac{Credit\ Purchases}{Average\ Creditors}$$

$$10 = \frac{20{,}00{,}000}{Average\ Creditors}$$

∴ Average Creditors = 2,00,000

(v) Average Payment Period

$$Average\ Payment\ Period = \frac{Average\ Creditors}{Cr.Purhcases} * 365$$

$$Average\ Payment\ Period = \frac{2{,}00{,}000}{20{,}00{,}000} * 365$$

∴Average Payment period = 36.5 days

(vi) Average Collection Period

$$Average\ Collection\ Period = \frac{Average\ Debtors}{Credit\ Sales} * 365$$
$$= \frac{3,00,000}{24,00,000} * 365$$
$$= 45.625\ days$$

(vii) Current Assets and Current Liabilities

Current Ratio = 2.4 : 1

WC	=	CA	-	CL
1.4	=	2.4	-	1
↓		↓		↓
2,80,000		?		?

∴ CA = 4,80,000
CL = 2,00,000

Solution to Q9

- Refer Solution to Qt 16 of Class Work

Solution to Q10

- Refer Solution to Qt 13 of Class Work

Solution to Q11

Trading, Profit and Loss account for the year end 31st March 2014

Particulars	Rs.	Particulars	Rs.
To Opening Stock	3,37,500	By Sales	31,25,000
To Purchases	26,06,250	By Closing Stock	6,00,000
To Gross Profit	7,81,250		

	37,25,000		37,25,000
To Expenses	1,56,250	By Gross Profit	7,81,250
To Net Profit	6,25,000		
	7,81,250		7,81,250

Working Notes

(i) Net Profit : Capital

1 : 4

↓ ↓

? 25,00,000

∴Net Profit = 6,25,000

(ii) NP Ratio = 20%

$$20 = \frac{6,25,000}{sales} * 100$$

∴ Sales = 31,25,000

(iii) GP Ratio = 25%

∴ COGS = 75%

COGS = 31,25,000*75% = 23,43,750

GP = 31,25,000*25% = 7,81,250

(iv) Stock Turnover = 5times

$$5 = \frac{COGS}{Average\ Stock}$$

$$5 = \frac{23,43,750}{Average\ Stock}$$

∴ Average Stock = 4,68,750

(v) Average Stock

$$Average\ Stock = \frac{Opening\ Stock + Closing\ Stock}{2}$$

$$4,68,750 = \frac{Opening\ Stock + 6,00,000}{2}$$

∴ Opening Stock = 3,37,500

UNIT – II CASH FLOW AND FUND FLOW ANALYSIS

SECTION B

Solution to Q1

Gama Limited

Fund Flow Statement for the year end 31st March 2015

Sources	Rs	Application	Rs
Sale of Fixed Assets	9,000	Increase in Working Capital	28,125
Sale of Investment	1,01,250	Purchase of Fixed Assets	2,70,000
Issue of Shares	1,12,500	Purchase of Investment	90,000
Funds from Operations	3,84,750	Redemption of Debentures (including premium)	1,23,750
		Payment of Tax	61,875
		Payment of Dividend (LY)	33,750
	6,07,500		6,07,500

Statement showing changes in Working Capital

Particulars	31.03.14	31.03.15	Increase	Decrease
Current Assets				
Stock	2,25,000	3,03,750	78,750	
Debtors	2,53,125	2,75,625	22,500	
Bills Receivables	45,000	73,125	28,125	
Prepaid Expenses	11,250	13,500	2,250	
(A)	5,34,375	6,66,000		
Current Liabilities				
Accrued Expenses	11,250	13,500		2,250
Creditors	1,80,000	2,81,250		1,01,250
(B)	1,91,250	2,94,750		
Working Capital (A-B)	3,43,125	3,71,250		
Increase in working Capital	28,125			28,125
Total	3,71,250	3,71,250	1,31,625	1,31,625

Working Notes

Adjusted P& L

Particulars	Rs	Particulars	Rs
To loss on sale of Fixed Assets	2,250	By Balance b/d	1,12,500
To Depreciation	90,000		
To Provision for Tax (CY)	68,625		
To Proposed Dividend (CY)	38,250		
To premium on Redemption of Debentures w/off	11,250		
To Transfer to General Reserve	56,250		
To Miscellaneous Expenditure w/off	5,625	By Fund from Operations	3,84,750
To Balance c/d	2,25,000		
	4,97,250		4,97,250

Fixed Asset A/c (at Cost)

Particulars	Rs	Particulars	Rs
To Bal b/d	11,25,000	By Cash /Bank	9,000
		By PFD	33,750
		By P& L A/c (11250-9000)	2,250
To Cash/ Bank	2,70,000		
		By bal c/d	13,50,000
	13,95,000		13,95,000

Provision for Depreciation

Particulars	Rs	Particulars	Rs
To Fixed Asset A/c	33,750	By Bal b/d	2,25,000
		By Depreciation	90,000
To Bal c/d	2,81,250		

	3,15,000		3,15,000

Investment A/c

Particulars	Rs	Particulars	Rs
To Bal b/d	2,02,500	By Cash Bank (90000+11250)	1,01,250
To Capital Reserve (profit on sale)	11,250		
To Cash Bank	90,000		
		By bal c/d	2,02,500

Provision for tax A/c

Particulars	Rs	Particulars	Rs
		By Bal b/d	78,750
To Cash Bank	61,875	By P&L (Current year provision)	68,625
To Bal c/d	85,500		
	1,47,375		1,47,375

Note : Adjustement related to Debtors has to be ignored as the Closing balance of Debtors in statement showing changes in working capital already is after taking into consideration that adjustment

Solution to Q2

Zed Ltd

Fund Flow Statement for the year end 31st March 2017

Sources	Rs	Application	Rs
Decrease in Working Capital	9,750	Purchase of Machinery	24,350
Issue of Debentures (2,40,000-75,000)	1,65,000	Repayment of Long Term Loan	10,000
Issue of Shares	1,15,000	Payment of Tax	16,850
(including premium)		Purchase of Building	4,30,000
Sale of Trade Investments	71,400	(601800-178400+6600)	
(65000+6400)			
Sale of Machinery	11,000		

Funds from Operations	1,09,050		
	4,81,200		4,81,200

Statement showing changes in Working Capital

Particulars	31.03.16	31.03.17	Increase	Decrease
Current Assets				
-				
Stock	46,150	58,800	12,650	
Prepaid Expenses	2,300	1,900		400
Debtors	77,150	76,350		800
Cash	95,900	77,400		18,500
(A)	2,21,500	2,14,450		
Current Liabilities				
Creditors	27,100	28,800		1,700
Bank OD	6,250	7,500		1,250
Accrued Expenses	4,600	4,350	250	
(B)	37,950	40,650		
Working Capital (A-B)	1,83,550	1,73,800		
Decrease in working Capital	-	9,750	9,750	-
Total	1,83,550	1,83,550	22,650	22,650

Working Notes

Adjusted Reserves and Surplus A/c

Particulars	Rs	Particulars	Rs
To Depreciation on Building	6,600	By Balance b/d	1,23,250
To Depreciation on Machinery		By Gain on sale of Trade Investment	

	11,400		6,400
To Provision for Tax (CY)	48,250	By Gain on Sale of Machinery	1,850
		By Fund from Operations	1,09,050
To Balance c/d	1,74,300		
	2,40,550		2,40,550

Machinery A/c (at WDV)

Particulars	Rs	Particulars	Rs
To Bal b/d	1,07,050	By Cash /Bank (9150+1850)	11,000
To P& L A/c (Gain on sale of Machinery)	1,850	By Depreciation	11,400
To Cash/ Bank	24,350		
		By bal c/d	1,10,850
	1,33,250		1,33,250

Solution to Q3

OP Ltd

Fund Flow Statement for the year end 31st March 2018

Sources	Rs	Application	Rs
Sale of Investments	45,000	Increase in Working Capital	2,98,000
Bank Loan Taken	1,00,000	Purchase of Machinery	3,00,000
Sale of Machinery	50,000	Redemption of Debentures	2,40,000
		Payment of Interim Dividend	1,20,000
		Payment of Dividend	3,00,000
Funds from Operations	10,63,000		
	12,58,000		12,58,000

Statement showing changes in Working Capital

Particulars	31.03.17	31.03.18	Increase	Decrease
Current Assets				
-				
Stock	4,80,000	8,50,000	3,70,000	
Debtors	6,00,000	7,98,000	1,98,000	-
Prepaid Expenses	50,000	40,000		10,000
Cash	1,40,000	85,000		55,000
(A)	12,70,000	17,73,000		
Current Liabilities				
Creditors	4,00,000	5,80,000		1,80,000
Outstanding Expenses	20,000	25,000		5,000
Provision for Tax	1,00,000	1,20,000	-	20,000
(B)	5,20,000	7,25,000		
Working Capital (A-B)	7,50,000	10,48,000		
Decrease in working Capital	2,98,000	-		2,98,000
Total	10,48,000	10,48,000	5,68,000	5,68,000

Working Notes

Adjusted Reserves and Surplus A/c

Particulars	Rs	Particulars	Rs
To Depreciation on Building	1,00,000	By Balance b/d	2,50,000
To Depreciation on Machinery	2,80,000		
To Proposed Dividend	3,60,000		
To Loss on Sale of Machinery	20,000		
To Premium on Redemption W/off	40,000		

To Proposed Interim Dividend	1,20,000	By Fund from Operations	10,63,000
To transfer to General Reserve	33,000		
To Balance c/d	3,60,000		
	13,13,000		13,13,000

Machinery A/c (at WDV)

Particulars	Rs	Particulars	Rs
To Bal b/d	18,00,000	By Cash /Bank	50,000
		By P&L (Loss on sale of Machinery)	20,000
		By Depreciation	2,80,000
To Cash/ Bank	3,00,000		
		By bal c/d	17,50,000
	21,00,000		21,00,000

Solution to Q4

Peacock Ltd

Fund Flow Statement for the year end 31st March 2019

Sources	Rs	Application	Rs
Sale of Machinery	40,000	Increase in Working Capital	2,40,000
Issue of Shares	22,00,000	Purchase of Machinery	24,70,000
		Purchase of Land	11,00,000
		Payment of Tax	4,00,000
		Payment of Dividend	4,00,000
		Repayment of Bank Loan	8,80,000
Funds from Operations	32,50,000		
	54,90,000		54,90,000

-

Statement showing changes in Working Capital

Particulars	31.03.18	31.03.19	Increase	Decrease
Current Assets				
-				
Stock	19,80,000	22,00,000	2,20,000	
Debtors	11,00,000	17,05,000	6,05,000	-
Cash	4,70,000	50,000		4,20,000
(A)	35,50,000	39,55,000		
Current Liabilities				
Creditors	13,20,000	14,85,000		1,65,000
(B)	13,20,000	14,85,000		
Working Capital (A-B)	22,30,000	24,70,000		
Increase in working Capital	2,40,000	-		2,40,000
Total	24,70,000	24,70,000	8,25,000	8,25,000

Working Notes

Adjusted Reserves and Surplus A/c

Particulars	Rs	Particulars	Rs
To Depreciation on Machinery	9,80,000	By Balance b/d	27,50,000
To Proposed Dividend	6,00,000		
To Loss on Sale of Machinery	20,000		
To Provision for Tax	5,50,000		
		By Fund from Operations	32,50,000

To Balance c/d	38,50,000		
	60,00,000		60,00,000

Machinery A/c (at WDV)

Particulars	Rs	Particulars	Rs
To Bal b/d	50,60,000	By Cash /Bank	40,000
		By P&L (Loss on sale of Machinery)	20,000
		By PFD	5,40,000
To Cash/ Bank	24,70,000		
		By bal c/d	69,30,000
	75,30,000		75,30,000

Provision for Depreciation

Particulars	Rs	Particulars	Rs
To Plant and Machinery	5,40,000	By Balance b/d	8,80,000
		By Depreciation	9,80,000
To Bal c/d	13,20,000		
	18,60,000		18,60,000

Solution to Q5

- Refer Solution to Q8 of Class Work

Solution to Q6

- Refer Solution to Q5 of Class Work

Chapter 4: Financing Decisions

(Chapters : Leverages, Capital Structure and Cost of Capital of J.K. SHAH CLASSES text book)

UNIT -1 Cost of Capital

Section B

Solution to Q1

- Refer Solution to Q15 of Class Work – Cost of Capital

Solution to Q2

Cost of Retained Earnings is the opportunity cost forgone by the Equity shareholders

Profit before tax which the equity shareholders can earn	75,000
Less: Tax @ 30%	(22,500)
Less: Brokerage (7,50,000*3%)	(22,500)
Net Earnings	30,000

Effective rate of return which shareholder can earn

$$= \frac{30000}{750000} * 100$$
$$= 4\%$$

Solution to Q3

Calculation of WACC using Market Value Weights

Sources	Amounts	Weights	Cost in %	W*C
Equity Share Capital (200000 shares * Rs. 30)	6000000	0.6	0.17	0.102
12% Preference Share Capital	1000000	0.1	0.12	0.012
9% Debentures	3000000	0.3	0.054	0.0162
	10000000	1		0.1302

$$Ke = \frac{D1}{P0} + g$$
$$= \frac{3}{30} + 0.07$$
$$= .17 \; or \; 17\%$$

$$Kp = \frac{Pref.Dividend(including\ DDT)}{MV = BV} * 100$$
$$= \frac{120000}{1000000} * 100$$
$$= 12\%$$
$$Kd = \frac{Interest(1 - tax\ rate)}{MV = BV} * 100$$
$$= \frac{270000(1 - 0.4)}{3000000} * 100$$
$$5.4\%$$

Solution to Q4

$$Kp = \frac{Preference\ Dividend(Including\ DDT) + \frac{(RV - NP)}{n}}{\frac{(RV + NP)}{2}} * 100$$

$$Kp = \frac{12 + \frac{(110 - 103)}{10}}{\frac{(110 + 103)}{2}} * 100$$

=11.92%

Solution to Q5

Calculation of WACC using Market Value Weights

Sources	Amounts	Weights	Cost in %	W*C
Equity Share Capital (10000 shares * Rs. 110)	11,00,000	0.52	15.09	7.9048
10% Preference Share Capital	4,00,000	0.19	10.00	1.9048
12% Debentures	6,00,000	0.29	6.00	1.7143
	21,00,000	1		11.524

$$Ke = \frac{D1}{P0} + g$$
$$= \frac{10}{110} + 0.06$$
$$= .1509 \; or \; 15.09\%$$

$$Kp = \frac{Pref.Dividend(including\ DDT)}{MV = BV} * 100$$
$$= \frac{40000}{400000} * 100$$
$$= 10\%$$
$$Kd = \frac{Interest(1 - tax\ rate)}{MV = BV} * 100$$
$$= \frac{72000(1 - 0.5)}{600000} * 100$$
$$= 6\%$$

Calculation of Revised WACC using Market Value Weights

Sources	Amounts	Weights	Cost in %	W*C
Equity Share Capital (10000 shares * Rs. 105)	10,50,000	0.34	17.43	6

10% Preference Share Capital	4,00,000	0.13	10.00	1.3115
12% Debentures	6,00,000	0.20	6.00	1.1803
14% Loan	10,00,000	0.33	7.00	2.2951
	30,50,000	1		10.79

$$Ke = \frac{D1}{P0} + g$$
$$= \frac{12}{105} + 0.06$$
$$= .1743 \; or \; 17.43\%$$

$$Kd = \frac{Interest\ (1 - Tax\ rate)}{Net\ Proceeds} * 100$$
$$= \frac{140000(1 - 0.5)}{1000000} * 100$$
$$= 7\%$$

Solution to Q6

1(a) Calculation of WACC using Market Value Weights

Sources	Amounts	Weights	Cost in %	W*C
Equity Share Capital (1.5 crore shares * Rs. 40)	60.00	0.74	16.00	11.82

11% Preference Share Capital (0.01 crore shares *Rs.75)	0.75	0.01	15.43	0.14
13.5% Debentures (0.1 crore Debentures * Rs 80)	8.00	0.10	12.70	1.25
15% Term Loan	12.50	0.15	9.00	1.38
	81.25	1.00		14.59

$$Ke = \frac{3.6}{40} + 0.07$$
$$= .16 \; or \; 16\%$$

$$Kp = \frac{Preference\ Dividend(Including\ DDT) + \frac{(RV - MV)}{n}}{\frac{(RV + MV)}{2}} * 100$$

$$Kp = \frac{11 + \frac{(100 - 75)}{10}}{\frac{(100 + 75)}{2}} * 100$$

=15.43%

$$Kd = \frac{Interest(1 - tax\ rate) + \frac{(RV - MV)}{n}}{\frac{(RV + MV)}{2}} * 100$$

$$Kd = \frac{13.5(1 - .4) + \frac{(100 - 80)}{6}}{\frac{(100 + 80)}{2}} * 100$$

=12.70%

$$Kd = \frac{Interest\ (1 - Tax\ rate)}{MV = BV} * 100$$
$$= \frac{1.875(1 - 0.4)}{12.5} * 100$$
$$= 9\%$$

1(b) Calculation of WACC using Book Value Weights

Sources	Amounts	Weights	Cost in %	W*C
Equity Share Capital (1.5 crore shares * Rs. 40)	15.00	0.26	16.00	4.10
Retained Earnings	20.00	0.34	16.00	5.47
11% Preference Share Capital (0.01 crore shares *Rs.75)	1.00	0.02	15.43	0.26
13.5% Debentures (0.1 crore Debentures * Rs 80)	10.00	0.17	12.70	2.17
15% Term Loan	12.50	0.21	9.00	1.92
	58.50	1.00		13.93

2 Calculation of WACC using Marginal Value Weights

Sources	Amounts	Weights	Cost in %	W*C
Equity Share Capital	3.50	0.35	18.25	6.39
Retained Earnings	1.50	0.15	16.00	2.40
15% Term Loan	2.50	0.25	9.00	2.25
16% Term Loan	2.50	0.25	9.60	2.40
	10.00	1.00		13.44

$$Ke = \frac{3.6}{32} + 0.07$$
$$= .1825 \; or \; 18.25\%$$

$$\boldsymbol{Kr = Ke(existing) = \; 16\%}$$

$$Kd(15\% Loan) = \frac{Interest\ (1 - Tax\ rate)}{Net\ Proceeds} * 100$$
$$= \frac{0.375(1 - 0.4)}{2.5} * 100$$
$$= 9\%$$

$$Kd(16\ \% Loan) = \frac{Interest\ (1 - Tax\ rate)}{Net\ Proceeds} * 100$$
$$= \frac{0.4(1 - 0.4)}{2.5} * 100$$
$$= 9.6\%$$

Solution to Q7

- Similar to Question No. 11 of Class Work

Solution to Q8

- Refer Solution to Q 27 of Class Work

Solution to Q9

(i) (a)

$$Kd(14\%\ Debentures) = \frac{Interest\ (1 - Tax\ rate)}{Net\ Proceeds} * 100$$

$$= \frac{14\ (1 - 0.5)}{98} * 100$$

$$= 7.14\%$$

$$Kp = \frac{Preference\ Dividend\ (Including\ DDT)}{Net\ Proceeds} * 100$$

$$= \frac{1.2}{9.8} * 100$$

$$= 12.24\%$$

(b)

$$Ke = \frac{D1}{P0} + g$$
$$= \frac{2.773 * 50\%}{27.75} + 0.12$$
$$= .1700\ or\ 17\%$$

(ii) Calculation of WACC using Marginal Value Weights

Sources	Amounts	Weights	Cost in %	W*C
14% Debentures	3,60,000.00	0.15	7.14	1.07
12% Preference Shares	1,20,000.00	0.05	12.24	0.61
Equity Share Capital	19,20,000.00	0.80	17.00	13.60
	24,00,000.00	1.00		15.28

(iii)

EPS for 2015	2.773
Dividend Payout @ 50 %	1.3865

Retention per share 1.3865
Retained Earnings 277300

Since the Capital Structure is Optimum, the proportion of Capital structure should remain same

Sources	Amounts	Weights
14% Debentures	51,993.75	0.15
12% Preference Shares	17,331.25	0.05
Retained Earnings	2,77,300.00	0.80
	3,46,625.00	1.00

Therefore Maximum Capital Expenditure that the company can make without making fresh issue will be Rs. 3,46,625

(iv) Calculation of WACC using Marginal Value Weights

Sources	Weights	Cost in %	W*C
14% Debentures	0.15	7.14	1.07
12% Preference Shares	0.05	12.24	0.61
Retained Earnings	0.80	18.93	15.14
	1.00		16.83

$$Ke = \frac{D1}{Net\ Proceeds} + g$$
$$= \frac{2.773 * 50\%}{20} + 0.12$$
$$= .1893\ or\ 18.93\%$$

Solution to Q10

Calculation of WACC of New Project using Book Value Weights

Sources	Amounts	Weights	Cost in %	W*C
Debentures	8,00,000.00	0.40	4.29	1.72
Preference Share Capital	2,00,000.00	0.10	10.60	1.06
Equity Share Capital	10,00,000.00	0.50	15.00	7.50
	20,00,000.00	1.00		10.28

Calculation of WACC of New Project using Market Value Weights

Sources	Amounts	Weights	Cost in %	W*C
Debentures	8,80,000.00	0.27	4.29	1.14
Preference Share Capital	2,40,000.00	0.07	10.60	0.77
Equity Share Capital	22,00,000.00	0.66	15.00	9.94
	33,20,000.00	1.00		11.84

It is assumed that the company is satisfied with its capital structure and intends to maintain it.

$$Kd = \frac{Interest(1 - tax\ rate) + \frac{(RV - NP)}{n}}{\frac{(RV + NP)}{2}} * 100$$

$$Kd = \frac{8(1 - .5) + \frac{(100 - 96)}{20}}{\frac{(100 + 96)}{2}} * 100$$

=4.29%

$$Kp = \frac{Preference\ Dividend(Including\ DDT) + \frac{(RV - NP)}{n}}{\frac{(RV + NP)}{2}} * 100$$

$$Kp = \frac{10 + \frac{(100 - 95)}{15}}{\frac{(100 + 95)}{2}} * 100$$

=10.60%

$$Ke = \frac{D1}{Net\ Proceeds} + g$$
$$= \frac{2}{20} + 0.05$$
$$= .15\ or\ 15\%$$

Solution to Q11

Calculation of WACC using Book and Market Value Weights

Sources	Cost in %	Book Values	Weights	W*C	Market Values	Weights	W*C
Equity Share Capital	18.13	80,00,000.00	0.40	7.25	1,60,00,000.00	0.64	11.60
Preference Share Capital	7.50	20,00,000.00	0.10	0.75	24,00,000.00	0.10	0.72
Debentures	7.00	60,00,000.00	0.30	2.10	66,00,000.00	0.26	1.85
Retained Earnings	18.13	40,00,000.00	0.20	3.63	-		-
		2,00,00,000.00	1.00	13.73	2,50,00,000.00	1.00	14.17

$$Ke = \frac{D1}{MPS} + g$$
$$= \frac{25 + 5\%}{200} + 0.05$$
$$= .1813\ or\ 18.13\%$$

$$Kd = \frac{Interest\ (1 - Tax\ rate)}{Market\ Value} * 100$$

$$= \frac{6{,}60{,}000\ (1 - 0.3)}{66{,}00{,}000} * 100$$

$$= 7.00\%$$

$$Kp = \frac{Preference\ Dividend\ (Including\ DDT)}{Market\ Value} * 100$$

$$= \frac{1{,}80{,}000}{24{,}00{,}000} * 100$$

$$= 7.5\%$$

Since Dividend is exempt from tax in the hands of the shareholders, the same has been ignored.

Solution to Q12

Similar to Question No. 11 of Class Work

Solution to Q13

Refer Solution of Practice Manual.

Solution to Q14

Similar to Question No. 10 of Class Work

Solution to Q15

Refer Solution of Practice Manual.

Solution to Q16

Refer Solution of Practice Manual.

Solution to Q17

Refer Solution of Practice Manual.

UNIT -2 Capital Structure Decision

Section B

Solution to Q1

Refer Solution of Practice Manual.

Solution to Q2

Refer Solution of Practice Manual.

Solution to Q3

Refer Solution to Q38 of Class Work – Cost of Capital

Solution to Q4

Refer Solution to Q5 of Class Work – Capital Structure

Solution to Q5

Since tax rate is not given,

$$V = \frac{EBIT}{Ko}$$

$$V = \frac{9{,}00{,}000}{.12}$$

∴ V= 75,00,000

And E= V-D

E= 75,00,000-30,00,000= 45,00,000

Income Statement

EBIT	9,00,000
Less: Interest	(3,00,000)
Dividend	6,00,000

$$Ke = \frac{Dividend}{E}$$

$$Ke = \frac{6{,}00{,}000}{45{,}00{,}000}$$

∴ Ke= .1333 or 13%

Solution to Q6

Refer Solution to Q39 of Class Work – Cost of Capital

Solution to Q7

Refer Solution to Q41 of Class Work – Cost of Capital

Solution to Q8

Similar to Q12 of Class Work – Capital Structure

Solution to Q9

Similar to Q38 of Class Work – Cost of Capital

Solution to Q10

Refer Solution to Q13 of Class Work –Capital Structure

Solution to Q11

Refer Solution of Practice Manual

UNIT -3 Business Risk and Financial Risk

Section B

Solution to Q1

$$CL = \frac{Contribution}{EBT}$$

$$CL = \frac{15750 + 1575}{7000}$$

$$CL = 2.475$$

$$CL = \frac{\%\ change\ in\ EPS}{\%\ change\ in\ Sales}$$

$$2.475 = \frac{\%\ change\ in\ EPS}{5}$$

∴ % Change in EPS = 12.375%

Solution to Q2

$$CL = \frac{Contribution}{EBT}$$

$$24 = \frac{3{,}00{,}000}{EBT}$$

∴ EBT = 12,500

∴EAT = EBT (1-tax rate) = 12,500(1-.3) =8,750

Solution to Q3

- Refer Solution of Practice Manual

Solution to Q4

$$CL = \frac{Contribution}{EBT}$$

$$CL = \frac{10{,}00{,}000 + 20{,}00{,}000}{8{,}00{,}000}$$

CL = 3.75

Solution to Q5

- Similar to Q2 of Practice Manual

Solution to Q6

- Similar to Q3 of Class Work - Leverages

Solution to Q7

- Similar to Q1 of Practice Manual

Solution to Q8

- Refer Solution of Practice Manual

Solution to Q9

- Refer Solution to Q17 of Class Work - Leverages

Solution to Q10

- Refer Solution of Practice Manual

Solution to Q11

- Refer Solution to Q 4 of Class Work - Leverages

Solution to Q12

- Refer Solution of Practice Manual

Solution to Q13

- Refer Solution of Practice Manual

Solution to Q14

- Refer Solution of Practice Manual

Solution to Q15

- Refer Solution to Q8 of Class Work - Leverages
-

Solution to Q16

- Refer Solution to Q7 of Class Work - Leverages

Solution to Q17

- Refer Solution of Practice Manual

Solution to Q18

- Refer Solution of Practice Manual

Solution to Q19

- Refer Solution of Practice Manual

Solution to Q20

- Refer Solution to Q12 of Class Work - Leverages

Solution to Q21

- Refer Solution of Practice Manual

Solution to Q22

- Refer Solution of Practice Manual

Solution to Q23

- Similar to Q6 of Class Work - Leverages

Solution to Q24

- Refer Solution to Q8 of Class Work - Leverages

Chapter 6: Investing Decisions

(Chapters : Capital Budgeting of J.K. SHAH CLASSES text book)

Solution to Q1

- Refer Solution to Q14 of Class Work – Capital Budgeting

Solution to Q2

- Refer Solution to Q5 of Class Work – Capital Budgeting

Solution to Q3

Calculation of NPV, PI and IRR

Project A

(i) NPV

(I) PVCO

Cost of the Project 12,00,000

(II) PVCI

YR	Annuity	PVAF @10%	PV
1-5	4,00,000	3.791	15,16,400

(III) NPV
= PVCI - PVCO

3,16,400

(ii) PI

PI= PVCI/PVCO

1.26

(iii) IRR

YR	Annuity	PVAF @18%	PV	PVAF @20%	PV
1-5	4,00,000	3.127	12,50,800	2.991	11,96,400

IRR = 18 + (12,50,800-12,00,000)/(12,50,800-11,96,400)
IRR = 19.87%

Project B

(i) NPV

(I) PVCO

Cost of the Project 18,00,000

(II) PVCI

YR	Annuity	PVAF @10%	PV
1-5	5,80,000	3.791	21,98,780

(III) NPV
= PVCI - PVCO

3,98,780

(ii) PI
PI= PVCI/PVCO

1.22

(iii) IRR

YR	Annuity	PVAF @18%	PV	PVAF @20%	PV
1-5	5,80,000	3.127	18,13,660	2.991	17,34,780

IRR = 18 + (18,13,660-18,00,000)/(18,13,600-17,34,780)
IRR = 18.35%

Since the NPV of the Project B is more the same should be selected.

Solution to Q4

Calculation of NPV is Machine is Purchased and part is serviced after Year 1

(I) PVCO
Cost of the Machine 50,000

(II) PV of Cost of Repair at the end of Year1

Yr	Repair	DF @ 10%	PV
1	10,000	0.9091	9,091

(III) PVCI

Yr	Annuity	PVAF	PV
1-3	18,000	2.4868	44,762

(IV) PV of Salvage

Yr	Salvage	DF @ 10%	PV
3	12,500	0.7513	9,391

(V) NPV

= PVCI - PVCO

-4,937

Calculation of NPV is Machine is Purchased and part is replaced after Year 2

(I) PVCO

Cost of the Machine	50,000

(II) PV of Cost of Replacement at the end of Year 2

Yr	Replacement Cost	DF @ 10%	PV
2	15,400	0.8264	12,727

(III) PVCI

Yr	Annuity	PVAF	PV
1-4	18,000	3.1699	57,058

(IV) PV of Salvage

Yr	Salvage	DF @ 10%	PV
4	9,000	0.6830	6,147

(V) NPV

= PVCI - PVCO

479

Calculation of NPV is Machine is Purchased and part is replaced after Year 2

(I) PVCO

Cost of the Machine 50,000

(II) PV of Cost of Replacement at the end of Year 2

Yr	Replacement Cost	DF @ 10%	PV
2	15,400	0.8264	12,727

(III) PVCI

Yr	Annuity	PVAF	PV
1-4	18,000	3.1699	57,058

(IV) PV of Salvage

Yr	Salvage	DF @ 10%	PV
4	9,000	0.6830	6,147

(V) NPV

= PVCI - PVCO

479

Since NPV Repair option is negative, Company is advised not to repair the part. If supplier offers a discount of Rs. 5000, our conclusion would still remain the same.

Notes:

a) Since NPV of Repair option is negative Annualized NPV is not calculated.
b) Since tax rate is not given, tax savings due to expenses has been ignored.

Solution to Q5

Calculation of Net PVCO

Particulars	Machine A	Machine B

(I) PVCO		
Cost of the Machine (a)	6,00,000	4,00,000
(II) PV of Running Cost		
Running Cost	1,20,000	1,80,000
* PVAF (10%, 3 years)	2.4868	1.7355
PV (b)	2,98,416	3,12,390
(III) Net PVCO = a+b	8,98,416	7,12,390
(IV) Annualised Net PVCO	3,61,274	4,10,481

Since Annualised Net PVCO of Machine A is less the same should be selected

Solution to Q6

Calculation of Net PVCO

Particulars	**Machine X**	**Machine Y**
(I) PVCO		
Cost of the Machine (a)	5,50,000	4,00,000
(II) PV of Running Cost		
Running Cost	1,25,000	1,50,000
* PVAF (10%, 3 years)	2.4019	1.6901
PV (b)	3,00,238	2,53,515
(III) Net PVCO = a+b	8,50,238	6,53,515
(IV) Annualised Net PVCO	3,53,985	3,86,672

Since Annualised Net PVCO of Machine X is less the same should be selected

Solution to Q7

Calculation of Discounted PBP, PBP, NPV and IRR

(I) PVCO

Cost of the Drying Equipment	6,00,000
Invest in Working Capital	80,000
	6,80,000

(II) PVCI

Yr	1	2	3	4	5
CFBT	2,40,000	2,75,000	2,10,000	1,80,000	1,60,000
Dep	1,20,000	1,20,000	1,20,000	1,20,000	1,20,000
NPBT	1,20,000	1,55,000	90,000	60,000	40,000
Tax	42,000	54,250	31,500	21,000	14,000
NPAT	78,000	1,00,750	58,500	39,000	26,000
Dep	1,20,000	1,20,000	1,20,000	1,20,000	1,20,000
CFAT	1,98,000	2,20,750	1,78,500	1,59,000	1,46,000
Recovery of Working Capital					80,000
DF @ 12%	0.8929	0.7972	0.7118	0.6355	0.5674
PV	1,76,794	1,75,982	1,27,056	1,01,045	1,28,232

PVCI 7,09,109

(a) PBP

Yr	CFBT	Cummulative
1	2,40,000	2,40,000
2	2,75,000	5,15,000
3	2,10,000	7,25,000
4	1,80,000	9,05,000
5		

PBP = 3 yrs + 165000/210000
3.79
years

	1,60,000	10,65,000

(b) Discounted PBP

Yr	CFBT	Cummulative
1	1,76,794	1,76,794
2	1,75,982	3,52,776
3	1,27,056	4,79,832
4	1,01,045	5,80,877
5	1,28,232	7,09,109

Dis PBP = 4 yrs +99123/128232
4.77
years

© NPV

= PVCI - PVCO

29,109

(d) IRR

Yr	CFAT	DF @ 12%	PV	DF @ 15%	PV
1	1,98,000	0.8929	1,76,794	0.8696	1,72,181
2	2,20,750	0.7972	1,75,982	0.7561	1,66,909
3	1,78,500	0.7118	1,27,056	0.6575	1,17,364
4	1,59,000	0.6355	1,01,045	0.5718	90,916
5	2,26,000	0.5674	1,28,232	0.4972	1,12,367
		PVCI	7,09,109		6,59,737

IRR = 12+ (7,09,109-6,80,000)/(7,09,109-6,59,737)
IRR =
12.59%

Solution to Q8

Calculation of Net PVCO

Particulars	Machine A	Machine B
(I) PVCO		
Cost of the Machine (a)	7,50,000	5,00,000
(II) PV of Running Cost		
Running Cost	2,00,000	3,00,000
* PVAF (10%, 3 years)	2.5313	1.7591
PV (b)	5,06,260	5,27,730
(III) Net PVCO		
= a+b	12,56,260	10,27,730
(IV) Annualised Net PVCO	4,96,290	5,84,236

Since Annualised Net PVCO of Machine A is less the same should be selected

Solution to Q9

Calculation of NPV and IRR

(I) PVCO

Cost of the Project 400

(II) PVCI

Yr	1	2	3	4	5

CFBT	160.00	160.00	180.00	180.00	150.00
Dep	80.00	64.00	51.20	40.96	32.77
NPBT	80.00	96.00	128.80	139.04	117.23
Tax	40.00	48.00	64.40	69.52	58.62
NPAT	40.00	48.00	64.40	69.52	58.62
Dep	80.00	64.00	51.20	40.96	32.77
CFAT	120.00	112.00	115.60	110.48	156.92
DF @ 12%	0.89	0.8	0.71	0.64	0.57
PV	106.80	89.60	82.08	70.71	89.44

PVCI 438.63

(III) Calculation of Profit/Loss on Sale of Fixed Assets

Cost	400	
Less: Accumulated Depreciation	269	
WDV on date of Sale	131	
Salvage	0	
	-	
Loss on Sale	131	
Tax Savings due to loss	65.536	This is added to cash flow of 5th Year

(IV) NPV

= PVCI - PVCO =38.63

IRR

Year	CFAT	DF @ 12%	PV	DF @ 16%	PV
1	120	0.89	106.80	0.86	103.20
2	112	0.8	89.60	0.74	82.88
3	115.6	0.71	82.08	0.64	73.98
4	110.48	0.64	70.71	0.55	60.76
5	156.92	0.57		0.48	

			89.44		75.32
			438.63		396.15

IRR = 12+ (438.63-400)*4/(438.63-396.15)

IRR = 15.64%

Conclusion : Since NPV is positive, the project should be accepted.

Solution to Q10

- Similar to Qt No. 9 of Class Work

Solution to Q11

Calculation of NPV

(I) PVCO	Rs	Rs	Rs	
Cost of the machine	200			
Less: Borrowings @ 16%	-200	0		
Investment in Stock		20		
Payment of Compensation for Cancellation of Contract		30	50	(a)

(II) PV of Repayment of Loan

Yr	Repayment	PVAF	PV	
1-4	50	2.856	142.8	(b)

(III) PVCI

Particulars	**Yr1**	**Yr2**	**Yr3**	**Yr4**
Savings in Disposal Cost	50	50	50	50
Increase in Sales	322	322	418	418
Increase in Material Consumption	30	40	85	85
Increase in Wages	60	65	85	100
Increase in Other Expenses	40	45	54	70
Increase in Insurance charges	30	30	30	30
Increase in Depreciation	50	38	28	21
Increase in Interest cost	32	24	16	8
Loss of Rent	10	10	10	10
Increase in NPBT	120	120	160	144
Less: Tax @ 50%	60	60	80	72
Increase in NPAT	60	60	80	72
Add : Increase in Depreciation	50	38	28	21
Add: Increase in Material Consumed	30	40	85	85
Less: Purchases of Raw Materials	65	40	85	30
CFAT	75	98	108	148
DF	0.87	0.756	0.658	0.572
PVCI	65.25	74.088	71.064	84.656

TOTAL PVCI	295.058 ©

Calculation of Purchases

Opening Stock of Raw Materials	20	55	55	55
Purchases	65	40	85	30
Less: Closing Stock of Raw Materials	55	55	55	0
RM Consumed	30	40	85	85

(IV) PV of Salvage

=(20-15)*.572
3.76 (d)

(V) Calculation of PV Tax Savings/Payment due to Loss/Profit on Sale of Fixed Asset @ of Year 4

Cost	200	
Less: Accumulated Depreciation	137	
WDV on date of Sale	63	
Salvage	5	
Loss on Sale	-58	
Tax Savings due to loss	29	
* DF of Year 4	0.572	
PV of Tax Savings	16.588	(e)

(VI) NPV= PVCI-PVCO

= c+d+e-a-b

122.606

Since NPV is positive the project should be accepted

Solution to Q12

Calculation of Discounted PBP , PI and NPV of Project A

Yr	Cash Flows	DF	PV	Cumulative
1	0	0.862	0	0

2	30000	0.743	22290	22290
3	132000	0.641	84612	106902
4	84000	0.552	46368	153270
5	84000	0.476	39984	193254
			193254	

PVCI	193254
PVCO	135000
NPV	**58254**
PI	**1.43**

Dis. PBP = 3yr+28098/46368

Dis. PBP = 3.61yrs

Calculation of Discounted PBP , PI and NPV of Project B

Yr	Cash Flows	DF	PV	Cumulative
1	60000	0.862	51720	51720
2	84000	0.743	62412	114132
3	96000	0.641	61536	175668
4	102000	0.552	56304	231972
5	90000	0.476	42840	274812
			274812	

PVCI	274812
PVCO	240000
NPV	**34812**
PI	**1.15**

Dis. PBP = 4 yr + 8028/42840

Dis. PBP = 4.19 yrs

Solution to Q13

- Refer Solution to Q10 of Class Work – Capital Budgeting

Solution to Q14

- Refer Solution to Q10 of Class Work – Capital Budgeting

Solution to Q15

Calculation of NPV

(I) PVCO

Cost of the new machine	60,00,000	
Less: Resale Value of the Existing	2,50,000	
Tax on profit on sale of existing machine (250000-0)*40%	1,00,000	
	58,50,000	(a)

(II) PVCI

Particulars	Existing Machine	New Machine
Sales Qty	80,000	1,00,000
Sales	1,60,00,000	2,00,00,000
Less : Expenses (excluding Depreciation and Corporate Overheads) (80,000 uts * Rs. 173 ; 1,00,000 uts * 148)	1,38,40,000	1,48,00,000
Less : Depreciation	0	11,50,000
NPBT	21,60,000	40,50,000
Less: Tax @ 40%	864000	1620000
NPAT	12,96,000	24,30,000
Add: Depreciation	0	11,50,000
CFAT	12,96,000	35,80,000
Increase in CFAT	22,84,000	
* PVAF (15% , 5years)		3.3522
PVCI	76,56,425	

(III) PV of Incremental Salvage

= (2,50,000 - 35,000)*.4972

= 1,06,898 ©

(IV) NPV = PVCI - PVCO

= c+b-a

= 19,13,323

Calculation of IRR

	Incremental CFAT	DF @ 15%	PV	DF @ 30%	PV
Yr 1-5	22,84,000	3.3522	76,56,425	2.4355	55,62,682
Yr 5	2,15,000	0.4972	1,06,898	0.2693	57,900
			77,63,323		56,20,582

IRR = 15 + 13.39

IRR = 28.39%

If DF increases by	PV decreases by
15	21,42,741
?	19,13,323
13.39	

Solution to Q16

Calculation of Payback period, Discounted PBP and NPV

		A			B		
Year	DF @ 10%	Cash Flows	PV	Cumulative	Cash Flows	PV	Cumulative
0	1	-10,000	-10,000		-10,000	-10,000	
1	0.9091	6,000	5,455	5,455	2,500	2,273	2,273
2	0.8264	2,000	1,653	7,107	2,500	2,066	4,339
3	0.7513	2,000	1,503	8,610	5,000	3,757	8,095
4	0.683	12,000	8,196	16,806	7,500	5,123	13,218
		NPV PBP Dis. PBP	6,806 3yrs 3.17 yrs		NPV PBP Dis. PBP	3,218 3 yrs 3.37 yrs	

		C			D		
Year	DF @ 10%	Cash Flows	PV	Cumulative	Cash Flows	PV	Cumulative
0	1	-3,500	-3,500		-3,000	-3,000	

1	0.9091	1,500	1,364	1,364	-	-	-
2	0.8264	2,500	2,066	3,430	-	-	-
3	0.7513	500	376	3,805	3,000	2,254	2,254
4	0.683	5,000	3,415	7,220	6,000	4,098	6,352
		NPV PBP Dis. PBP	3,720 1.8 yrs 2.19 yrs		NPV PBP Dis. PBP	3,352 3 yrs 2.18 yrs	

(ii) If Standard Payback period is 2 yrs, then Project C will be acceptable. If however the standard PBP is 3 yrs then all the three projects are acceptable.

(iii) If Standard Discounted Payback period is 2 yrs, then no project will be acceptable. If however the standard PBP is 3 yrs then Project C will be acceptable.

(iv) Of all the methods NPV method is the best. Accordingly, select Project A

Solution to Q17

Calculation of NPV and IRR

	A					B				
Year	Cash Flows	DF @ 10%	PV	DF @ 20%	PV	Cash Flows	DF @ 10%	PV	DF @ 20%	PV
1	85	0.91	77.35	0.83	71	480	0.91	437	0.83	398
2	200	0.83	166.00	0.69	138	100	0.83	83	0.69	69
3	240	0.75	180.00	0.58	139	70	0.75	53	0.58	41
4	220	0.68	149.60	0.48	106	30	0.68	20	0.48	14
5	70	0.62	43.40	0.41	29	20	0.62	12	0.41	8
		PVCI PVCO	616.35 500		482			605 500		531
		NPV	116.35				NPV	105.10		

IRR	18.66%

IRR	24.10%

Of both the method NPV method is the best. Hence select Project A.

Solution to Q18

Calculation of NPV if existing machine is replaced

(I) PVCO

Cost of the new machine	10,00,000	
Less: Resale Value of the Existing	2,00,000	
	8,00,000	(a)

(II) PVCI

Particulars	Existing Machine	New Machine
Sales Qty	30,000	75,000
Sales	4,50,000	11,25,000
Less : Material Cost	1,20,000	3,00,000
Labour Cost	1,20,000	2,10,000
Indirect Cash Cost p.a.	50,000	65,000
Less : Depreciation	30,000	1,20,000
NPBT	1,30,000	4,30,000
Less: Tax @ 30%	39,000	1,29,000
NPAT	91,000	3,01,000
Add: Depreciation	30000	1,20,000
CFAT	1,21,000	4,21,000
Increase in CFAT	3,00,000	
* PVAF (15% , 5years)	4.968	
PVCI	14,90,400	

(III) PV of Incremental Salvage

= (40,000 - 0)*.404

16,160 ©

(IV) NPV = PVCI - PVCO
= c+b-a

7,06,560

Conclusion : Company is advised to replace the existing machine with the new one as it will increase the cash flows by Rs. 7,06,500 in PV terms

Solution to Q19

- Similar to Q9 of Class Work – Capital Budgeting

Solution to Q20

- Refer Solution of Practice Manual

Solution to Q21

- Similar to Q8 of Class Work – Capital Budgeting

Solution to Q22

Calculation of NPV of the Project

(I) PVCO

Cost of the new Equipment	1,75,00,000	
Less: Subsidy	20,00,000	
Add : Investment in Woking Capital	20,00,000	
Additional Equipment (12,50,000*0.712)	8,90,000	
	1,83,90,000	(a)

(II) PVCI

Particulars	Yr1	Yr2	Yr3	Yr4 - Yr5	Yr6 - Yr8
Sales Qty	72,000	1,08,000	2,60,000	2,70,000	1,80,000
Sales	86,40,000	1,29,60,000	3,12,00,000	3,24,00,000	2,16,00,000
Less : Variable Cost	51,84,000	77,76,000	1,87,20,000	1,94,40,000	1,29,60,000
Cash Fixed Cost	18,00,000	18,00,000	18,00,000	18,00,000	18,00,000
Less : Depreciation	21,87,500	21,87,500	21,87,500	24,12,500	24,12,500
NPBT	-5,31,500	11,96,500	84,92,500	87,47,500	44,27,500
Less: Tax @ 30%	-	1,99,500	25,47,750	26,24,250	13,28,250
NPAT	-5,31,500	9,97,000	59,44,750	61,23,250	30,99,250
Add : Depreciation	21,87,500	21,87,500	21,87,500	24,12,500	24,12,500
CFAT	16,56,000	31,84,500	81,32,250	85,35,750	55,11,750
DF @ 12%	0.893	0.797	0.712	1.203	1.363
PV	14,78,808	25,38,047	57,90,162	1,02,68,507	75,12,515
TOTAL PVCI	2,75,88,039				(b)

(III) PV of Salvage and PV of recovery of Working Capital

Yr	Salvage + Working Capital	DF @ 12%	PV	
8	21,25,000	0.404	8,58,500	(c)

(IV) NPV = PVCI - PVCO

= b+c-a

1,00,56,539

Solution to Q23

Calculation of PBP, ARR, NPV, PI and IRR

(I) PVCO

Cost of the new Equipment	2,00,000
	2,00,000

(a)

(II) PVCI

Particulars	Yr1	Yr2	Yr3	Yr4	Yr5
NPBT	85,000	1,00,000	80,000	80,000	40,000
Less: Tax @ 30%	25,500	30,000	24,000	24,000	12,000
NPAT	59,500	70,000	56,000	56,000	28,000
Add : Depreciation	40,000	40,000	40,000	40,000	40,000
CFAT	99,500	1,10,000	96,000	96,000	68,000
DF @ 12%	0.909	0.826	0.751	0.683	0.621
PV	90,446	90,860	72,096	65,568	42,228
TOTAL PVCI	3,61,198				

PBP

PBP = 1 yr + 1,00,500/1,10,000

PBP = 1.92 yrs

ARR = Average NPAT / Average Investment *100

=((59500+70000+56000+56000+28000)/5)/(200000+0)/2

53.90 %

NPV = PVCI – PVCO

= 1,61,198

IRR

Particulars	CFAT	DF @ 38%	PV	DF @ 40%	PV
Yr1	99,500	0.725	72,138	0.714	71,043
Yr2	1,10,000	0.525	57,750	0.51	56,100
Yr3		0.381		0.364	

	96,000		36,576		34,944
Yr4	96,000	0.276	26,496	0.26	24,960
Yr5	68,000	0.2	13,600	0.186	12,648
		PVCI	2,06,560		1,99,695

IRR = 38 + (206560-200000)/(206560-199695)*2
IRR = 39.91%

Solution to Q24

- Refer Solution of Practice Manual

Solution to Q25

- Refer Solution of Practice Manual

Solution to Q26

- Refer Solution to Q9 of Class Work – Capital Budgeting

Solution to Q27

- Refer Solution to Q8 of Class Work – Capital Budgeting

Solution to Q28

- Refer Solution of Practice Manual

Solution to Q29

Calculation of Net PVCO

Particulars	**Machine A**	**Machine B**
(I) PVCO		
Cost of the Machine (a)	8,00,000	6,00,000
(II) PV of Running Cost		
Running Cost	1,30,000	2,50,000
* PVAF (10%, 3 years)	2.4868	1.7355

PV (b)	3,23,284	4,33,875
(III) Net PVCO = a+b	11,23,284	10,33,875
(IV) Annualised Net PVCO	4,51,699	5,95,722

Since Annualised Net PVCO of Machine A is less the same should be selected

Chapter 7: Management of Working Capital

(Chapters: Estimation of Working Capital, Cash Budget and Receivables Management of J.K. SHAH CLASSES text book)

UNIT -1 Meaning, Concept and Policies of Working Capital

Section B

Solution to Q1

Statement showing Working Capital Requirement on Total Basis

Particulars	Working	Amount
(A) CURRENT ASSETS		
(I) STOCK		
- Raw Materials	=7,20,00,000*1/12	60,00,000
- WIP	=(7,20,00,000 * 1/12*100%)+ (1,20,00,000*1/12*50%)+(2,40,00,000*1/12*50%)	75,00,000
- Finished Goods	=(10,80,00,000*2/12)	1,80,00,000
(II) Debtors	=(12,00,00,000*2/12)	2,00,00,000
(III) Cash and Bank		-
(IV) Other Current Assets		
A		5,15,00,000

(B) CURRENT LIABILITIES		
(I) Creditors	=7,20,00,000*1/12	60,00,000
(II) Other Current Liabilities		
Outstanding Wages	=1,20,00,000*1/12	10,00,000
B		70,00,000
Working Capital (A-B)		4,45,00,000

Note : Working Capital Estimation has been done on Total Basis. Alternatively Cash cost could have also been considered

Working Notes

1) Estimated Income Statement

Particulars	Units	p.a
Raw Materials Consumed	60	7,20,00,000
Direct Labour	10	1,20,00,000
Manufacturing Expenses	20	2,40,00,000
Depreciation	-	-
COP/COGS	90	10,80,00,000
Administrative Expenses	-	-
Selling Expenses	-	-
Total Cost	90	10,80,00,000
Profit	10	1,20,00,000
Sales	100	12,00,00,000

2) Credit Periods

Production in units	1200000
O/s Wages	1 mth
WIP	1 mth
FG	2 mth
RM	1 mth

Debtors	2 mth
Creditos	1 mth

Solution to Q2

Statement showing Working Capital Requirement on Total Basis

Particulars	Working	Amount
(A) CURRENT ASSETS		
(I) STOCK		
- Raw Materials	=1,30,00,000*1/12	10,83,333
- WIP	=(1,30,00,000 * 1/52*80%)+ (48,75,000*1/52*80%)+(97,50,000*1/52*80%)	4,25,000
- Finished Goods	=(2,76,25,000*2/52)	10,62,500
(II) Debtors	=(3,25,00,000*4/52)	25,00,000
(III) Cash and Bank		37,500
(IV) Other Current Assets		-
A		51,08,333
(B) CURRENT LIABILITIES		
(I) Creditors	=1,30,00,000*3/52	7,50,000
(II) Other Current Liabilities		
Outstanding Wages	=48,75,000*1/52	93,750
Outstanding Expenses	=97,50,000*2/52	3,75,000
B		12,18,750
Working Capital (A-B)		38,89,583

Note : Working Capital Estimation has been done on Total Basis. Alternatively Cash cost could have also been considered

Working Notes

1) Estimated Income Statement

Particulars	Units	p.a

Raw Materials Consumed	100.00	1,30,00,000
Direct Labour	37.50	48,75,000
Manufacturing Expenses	75.00	97,50,000
Depreciation	-	-
COP/COGS	212.50	2,76,25,000
Administrative Expenses	-	-
Selling Expenses	-	-
Total Cost	212.50	2,76,25,000
Profit	37.50	48,75,000
Sales	250.00	3,25,00,000

2) Credit Periods

Production in units	130000
O/s Wages	1week
WIP	1week
FG	2 weeks
RM	1 mth
Debtors	4 weeks
Creditos	3weeks
O/s Overheads	2 weeks
Cash bank	37500

Solution to Q3

Statement showing Working Capital Requirement on Total Basis

Particulars	Working	Amount
(A) CURRENT ASSETS		
(I) STOCK		
- Raw Materials	=91,26,000*4/52	7,02,000.00
- WIP	=(9126000* 2/52*80%)+ (3822000*2/52*60%)+(7644000*2/52*60%)	5,45,400.00

- Finished Goods	=(20592000*3/52)	11,88,000.00
(II) Debtors	=(23400000*6/52)*4/5	21,60,000.00
(III) Cash and Bank		2,50,000.00
(IV) Other Current Assets		-
A		48,45,400.00
(B) CURRENT LIABILITIES		
(I) Creditors	=91,26,000*8/52	14,04,000.00
(II) Other Current Liabilities		
Outstanding Wages	=3822000*1/52	73,500.00
Outstanding Expenses	=6240000*2/52	2,40,000.00
B		17,17,500.00
Working Capital (A-B)		31,27,900.00

Note : Working Capital Estimation has been done on Total Basis. Alternatively Cash cost could have also been considered

Solution to Q4

Statement showing Working Capital Requirement on Total Basis

Particulars	Working	Amount
(A) CURRENT ASSETS		
(I) STOCK		
- Raw Materials	=300*2.5/12	62.50
- WIP	=(300 * 1/12*100%)+ (60*1/12*50%)+(120*1/12*50%)	32.50

- Finished Goods	=(480*.5/12)	20.00
(II) Debtors	=(900*1.5/12)	112.50
(III) Cash and Bank		-
(IV) Other Current Assets		-
A		227.50
(B) CURRENT LIABILITIES		
(I) Creditors	=300*3/12	75.00
(II) Other Current Liabilities		
Outstanding Wages	=60*1/12	5.00
Outstanding Expenses	=(120+120+150)*(0.5/12)	16.25
B		96.25
Working Capital (A-B)		131.25

Note : Working Capital Estimation has been done on Total Basis. Alternatively Cash cost could have also been considered

Working Notes

1) Estimated Income Statement

Particulars	Exisiting	Estimated
Raw Materials Consumed	150.00	300
Direct Labour	30.00	60
Manufacturing Expenses	60.00	120
Depreciation	-	-
COP/COGS	240.00	480
Administrative Expenses	60.00	120
Selling Expenses	50.00	150
Total Cost	350.00	750
Profit	100.00	150

Sales	450.00	900

2) Credit Periods

O/s Wages	1 month
WIP	1month
FG	0.5 month
RM	2.5months
Debtors	1.5month
Creditos	3 months
O/s Overheads	0.5 month

Solution to Q5

- Similar to Qt. 10 and 11 of Class Work – Estimation of Working Capital

Solution to Q6

- Refer Solution to Qt.4 of Class Work – Estimation of Working Capital

Solution to Q7

Balance Sheet as at 31st March…

Liabilities	Rs.	Assets	Rs.
Equity Share Capital	7,81,250	Fixed Assets	15,00,000
Reserves	4,68,750	Current Assets	
		Stock	3,75,000
Long Term Debt	6,25,000	Debtors	5,00,000
		Cash	2,50,000
Current Liabilities (Bal. figure)	7,50,000		
	26,25,000		26,25,000

Statement showing Working Capital Requirement

Particulars	Amount	
(A) CURRENT ASSETS		
(I) STOCK	3,75,000	
(II) Debtors	5,00,000	
(III) Cash and Bank	2,50,000	
(IV) Other Current Assets	-	
A	11,25,000	
(B) CURRENT LIABILITIES	7,50,000	
B	7,50,000	
Working Capital (A-B)	3,75,000	90.00
Add: Safety Margin	41,667	10
Total Working Capital	4,16,667	100

Working Notes

(i) Sales = 30,00,0000
GP Ratio = 25%
∴ COGS = 22,50,000

(ii) Fixed Asset Turnover = 1.5 times

$$1.5 = \frac{22,50,000}{Fixed\ Assets}$$

∴ Fixed Assets = 15,00,000

(iii) Stock Turnover = 6 times

$$6 = \frac{22,50,000}{Closing\ Stock}$$

∴ Closing Stock = 3,75,000

(iv) CA = QA + Stock

$$1.5 = 1 + 0.5$$

? ? 3,75,000

∴ CA = 11,25,000

QA = 7,50,000

(v) Debtors Collection Period = 2months

$$2 = \frac{Closing\ Debtors}{30,00,000} * 12$$

∴ Closing Debtors = 5,00,000

∴ Cash = 7,50,000-5,00,000=2,50,000

(vi) FA : Net worth = 1.2:1

∴ Net worth = 15,00,000/1.2=12,50,000

(vii) Reserves : Capital = 0.6:1

Reserves	0.6-------?------4,68,750
+ Capital	1---------?------ 7,81,250
Net worth	1.6------ 12,50,000

(viii) Capital Gearing Ratio/ Debt: Equity = 0.5:1

Debt	0.5-------?-----6,25,000
Equity	1--------12,50,000

Solution to Q8

- Similar to Q8 of Class Work – Estimation of Working Capital

Solution to Q9

- Refer Solution of Practice Manual

Solution to Q10

Statement showing Working Capital Requirement on Cash Cost Basis

Particulars	Working	Amount
(A) CURRENT ASSETS		
(I) STOCK		
- Raw Materials	= 6480000*2/12	10,80,000
- WIP	=(6480000* 1/12*100%)+	6,75,000

	(1080000*1/12*50%)+(2160000*1/12*50%)	
- Finished Goods	=(9720000*1/12)	8,10,000
(II) Debtors	=(97200000*1.5/12)	12,15,000
(III) Cash and Bank		2,52,000
(IV) Other Current Assets		-
A		40,32,000
(B) CURRENT LIABILITIES		
(I) Creditors	= 6480000*1/12	5,40,000
(II) Other Current Liabilities		
Outstanding Wages	=1080000*1/12	90,000
B		6,30,000
Working Capital (A-B)		34,02,000.00
Add: Safety Margin		5,10,300.00
Total Working Capital		39,12,300
Working Notes		

1) Estimated Income Statement

Particulars	Pu	Total
Raw Materials Consumed	120.00	64,80,000
Direct Labour	20.00	10,80,000
Manufacturing Expenses	40.00	21,60,000
Depreciation	-	-

COP/COGS	180.00	97,20,000
Administrative Expenses	-	-
Selling Expenses	-	-
Total Cost	180.00	97,20,000
Profit	20.00	10,80,000
Sales	200.00	1,08,00,000

2) Credit Periods

Production in units	54000
O/s Wages	1 month
WIP	1 month
FG	1 month
RM	2 months
Debtors	1.5 months
Creditos	1 month

Solution to Q11

- Similar to Q1 and Q3 of Class Work – Estimation of Working Capital

Solution to Q12

- Refer Solution of Practice Manual

UNIT -4 Management of Receivables

Section B

Solution to Q1

Statement to determine whether to accept the offer or not

Particulars	Rs.
Increase in Sales	1,20,000
Increase in Cost of Sales	1,02,000
Increase in Bad Debts	12,000
Increase in NPBT	6,000
Less: Tax @ 30%	1,800
Increase in NPAT	4,200

Investment in Debtors at Cost
= Cost of Sales * Credit period/12
=1,02,000*1.5/12
=12,750

Rate of Return (after tax)
= Profit after tax/ Investment in Debtors at cost *100
=4,200 /12,750 *100
=32.94%

Since the rate of return after tax from the proposal is 32.94% and desired rate of return after tax is 40%, the proposal should be rejected

Solution to Q2

Statement to determine Appropriate Credit Policy

Particluars	Existing	Proposed	
	50 days	40 days	30 days
Sales p.a.	25,00,000	25,00,000	25,00,000
Bad Debts (A)	1,25,000	1,00,000	75,000
Collection Charges (B)	25,000	50,000	80,000
Debtors on Sales = Sales * Credit period/365	3,42,466	2,73,973	5,47,945
Interest Lost @ 15% p.a. (C)	51,370	41,096	82,192
A+B+C	2,01,370	1,91,096	2,37,192

Conclusion : Company is advised to go for 40 days credit policy as the cost is minimum

Note : Debtors are valued on Sales

Solution to Q3

Statement to determine Appropriate Credit Policy

Particluars	**Existing**	**Proposed**
	1 month	**2 months**
Sales Qty p.a.	21,000	22,680
Sales p.a.	8,40,000	9,07,200
Less: Variable Cost	5,25,000	5,67,000
Contribution (A)	3,15,000	3,40,200
Debtors on Variable Cost = VC * Credit period/12	43,750	94,500
Interest Lost @ 25% p.a. (B)	10,938	23,625
A- B	3,04,063	3,16,575

Conclusion : Company is advised to go for 2 months credit policy as it will increase the profits

Note : Debtors are valued on Variable Cost

Solution to Q4

Statement to determine Appropriate Credit Policy

Particulars	Existing	Proposed
	45 days	60 Days
Sales p.a.	2,56,48,750	2,82,13,625
Less: Variable Cost	1,84,67,100	2,03,13,810
Contribution (A)	71,81,650	78,99,815
Bad Debts (B)	3,84,731	5,64,273
NPBT	67,96,919	73,35,543
Less: Tax @ 35%	23,78,922	25,67,440
NPAT	44,17,997	47,68,103
Debtors on Variable Cost = VC * Credit period/365	22,76,766	33,39,256
Interest Lost @ 15% p.a. (C)	3,41,515	5,00,888
A- B-C	40,76,482	42,67,214

Conclusion : Company is advised to go for 60 Days credit policy as it will increase the profits

Note : Debtors are valued on Variable Cost

Solution to Q5

- Refer Solution of Practice Manual

Solution to Q6

- Refer Solution to Q10 – Class Work – Receivables Management

Solution to Q7

Statement to determine Appropriate Credit Policy

Particluars	Existing	Proposed		
	1 month	1.5 month	2 months	3 Months
Sales p.a.	200	210	220	250
Less: Variable Cost @ 60%	120	126	132	150

Contribution (A)	80	84	88	100
Bad Debts (B)	4.00	5.25	6.60	12.50
Administration Cost (C)	1.20	1.30	1.50	3.00
Debtors on Variable Cost				
= VC * Credit period/12	10.00	15.75	22.00	37.50
Interest Lost @ 20% p.a. (D)	2.00	3.15	4.40	7.50
A- B-C-D	72.80	74.30	75.50	77.00

Conclusion : Company is advised to go for 3 months credit policy as it will increase the profits

Note : Debtors are valued on Variable Cost

Solution to Q8

Statement to determine Appropriate Credit Policy

Particluars	Existing	Proposed
Sales p.a.	12,00,000	16,00,000
Less: Variable Cost @ 78%	9,36,000	12,48,000
Contribution (A)	2,64,000	3,52,000
Bad Debts (B)	18,000	32,000
Discount (C)	6,000	25,600
Debtors on Variable Cost		
= VC * Collection period/360	78,000	69,333
Interest Lost @ 15% p.a. (D)	11,700	10,400
A- B-C-D	2,28,300	2,84,000

Conclusion : Company is advised to go for Proposed credit policy as it will increase the profits by Rs. 55700 before tax and Rs 38990 after tax

Note : Debtors are valued on Variable Cost

Solution to Q9

Statement to determine Appropriate Credit Policy

Particluars	Existing	Proposed	
		Policy 1	Policy 2

Sales p.a.	30,00,000	42,00,000	4500000
Less: Variable Cost @ 70%	21,00,000	29,40,000	31,50,000
Contribution (A)	9,00,000	12,60,000	13,50,000
Bad Debts (B)	90,000	2,10,000	2,70,000
Debtors Turnover	4 times	3 times	2.4 times
Debtors = Variable Cost/Debtors Turnover	5,25,000	9,80,000	13,12,500
Interest Lost @ 20% p.a. (C)	1,05,000	1,96,000	2,62,500
A- B-C	7,05,000	8,54,000	8,17,500

Conclusion : Company is advised to go for Proposed Policy 1 as it will increase the profits

Note : Debtors are valued on Variable Cost

Solution to Q11

Statement to determine Appropriate Credit Policy

Particluars	Existing	Proposed	
		Policy 1	Policy 2
Sales p.a.	225	275	350
Less: Variable Cost @ 60%	135	165	210
Contribution (A)	90	110	140
Bad Debts (B)	7.50	22.50	47.50
Debtors Turnover	5 times	4 times	3 times
Debtors = Variable Cost/Debtors Turnover	27.00	41.25	70.00
Interest Lost @ 20% p.a. (C)	5.40	8.25	14.00
A- B-C	77.10	79.25	78.50

Conclusion : Company is advised to go for Proposed Policy 1 as it will increase the profits

Note : Debtors are valued on Variable Cost

Solution to Q10

Calculation of Cost under In-house management

Particulars	Rs.
Sales	12,00,000
Bad Debts (A)	18,000
Administration Cost (B)	50,000
Net Cost (A + B)	68,000

Cost under Factoring Proposal

Particulars	Rs.
Sales	12,00,000
Commision (A)	24,000
Interest on Advance from Factor (B)	43,200
Net Cost (A + B)	67,200

Net Benefit to the Firm = 68000-66336 800

Calculation of Interest on Advance from Factor

Net Amount receivable for the whole year	12,00,000
Net Amount receivable every 90 days	3,00,000
Less: Factor Reserve @ 10%	30,000
Advance from Factor	2,70,000
Interest on Advance @ 16% p.a.	43,200

Note : 1) Debtors are valued on Sales
2) Factor Reserve is calculated on Gross amount before deducting Commission. Alternatively it could have been calculated after deducting Commission
3) It is assumed that Factors Payment period is equal to Collection Period

Solution to Q12

Calculation of Cost under In-house management

Particulars	Rs.
Credit Sales	1,60,00,000
Bad Debts (A)	1,60,000
Administration Cost (B)	2,40,000
Discount (C)	1,60,000
Net Cost (A + B)	5,60,000

Cost under Factoring Proposal

Particulars	Rs.
Sales	1,60,00,000
Commision (A)	3,20,000
Interest on Advance from Factor (B)	5,76,000

Net Cost (A + B)	8,96,000

Net Cost of Factoring to the Firm	3,36,000
Effective Cost in %	10.50

Calculation of Interest on Advance from Factor

Net Amount receivable for the whole year	1,60,00,000
Net Amount receivable every 80 days	35,55,556
Less: Factor Reserve @ 10%	3,55,556
Advance from Factor	32,00,000
Interest on Advance @ 18%	5,76,000

Note : 1) Debtors are valued on Sales
2) Factor Reserve is calculated on Gross amount before deducting Commission. Alternatively it could have been After deducting Commission
3) It is assumed that Factors Payment period is equal to the Average Collection Period and Average Collection Period is calculated as (0.5*40 days + 0.5*120 days)

(ii) Since the effective cost of Factoring is less than the rate of interest charged by the bank of 14%, the company is advised to avail factoring services

Solution to Q13

Calculation of Cost under In-house management

Particulars	Rs.
Sales	3,20,00,000
Bad Debts (A)	4,80,000
Administration Cost (B)	5,00,000
Net Cost (A + B)	9,80,000

Cost under Factoring Proposal

Particulars	Rs.
Sales	3,20,00,000
Commision (A)	6,40,000
Interest on Advance from Factor (B)	12,96,000
Net Cost (A + B)	19,36,000

Net Cost of Factoring to the Firm = 9,80,000-19,36,000	-9,56,000

Calculation of Interest on Advance from Factor

Net Amount receivable for the whole year	3,20,00,000
Net Amount receivable every 90 days	80,00,000

Less: Factor Reserve @ 10%	8,00,000
Advance from Factor	72,00,000
Interest on Advance @ 18% p.a.	12,96,000

Note : 1) Debtors are valued on Sales
2) Factor Reserve is calculated on Gross amount before deducting Commission. Alternatively it could have been After deducting Commission
3) It is assumed that Factors Payment period is equal to Collection Period

UNIT -2 Treasury and Cash Management Section B

Refer Solutions of Practice Manual