PAPER – 3 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

PART I : COST ACCOUNTING

QUESTIONS

Material

1. Aditya Ltd. is engaged in heavy engineering works on the basis of job order received from industrial customers. The company has received a job order of making turbine from a power generating company. Below are some details of stores receipts and issues of copper wire, used in the manufacturing of turbine:

Feb. 1	Opening stock of 1,200 Kgs. @ ₹ 475 per kg.
Feb. 5	Issued 975 kgs. to mechanical division vide material requisition no. Mec 09/13
Feb. 6	Received 3,500 kgs. @ ₹ 460 per kg vide purchase order no. 159/2013
Feb. 7	Issued 2,400 kgs. to electrical division vide material requisition no. Ele 012/13
Feb. 9	Returned to stores 475 kgs. by electrical division against material requisition no. Ele 012/13.
Feb. 15	Received 1,800 kgs. @ ₹ 480 per kg. vide purchase order no. 161/ 2013
Feb. 17	Returned to supplier 140 kgs. out of quantity received vide purchase order no. 161/2013.
Feb. 20	Issued 1,900 kgs. to electrical division vide material requisition no. Ele 165/ 2013

On 28th February, 2014 it was found that 180 kgs. of wire was fraudulently misappropriated by the stores assistant and never recovered by the company.

From the above information you are required to prepare the Stock Ledger account using 'Weighted Average' method of valuing the issues.

Labour

2. A, B and C are three industrial workers working in Sports industry and are experts in making cricket pads. A, B and C are working in Mahi Sports, Virat Sports and Sikhar Sports companies respectively. Workers are paid under different incentive schemes. Company wise incentive schemes are as follows:

Company	Incentive scheme
Mahi Sports	Emerson's efficiency system
Virat Sports	Merrick differential piece rate system
Sikhar Sports	Taylor's differential piece work system

The relevant information for the industry is as under:

Standard working hours	8 hours a day
Standard output per hour (in units)	2
Daily wages rate	₹ 360
No. of working days in a week	6 days

Actual outputs for the week are as follows:

A	B	C
132 units	108 units	96 units

You are required to calculate effective wages rate and weekly earnings of all the three workers.

Overheads

3. Arnav Ltd. has three production departments M, N and O and two service departments P and Q. The following particulars are available for the month of September, 2013:

	(₹)
Lease rental	35,000
Power & Fuel	4,20,000
Wages to factory supervisor	6,400
Electricity	5,600
Depreciation on machinery	16,100
Depreciation on building	18,000
Payroll expenses	21,000
Canteen expenses	28,000
ESI and Provident Fund Contribution	58,000

Followings are the further details available:

Particulars	M	N	O	P	Q
Floor space (square meter)	1,200	1,000	1,600	400	800
Light points (nos.)	42	52	32	18	16
Cost of machines (₹)	12,00,000	10,00,000	14,00,000	4,00,000	6,00,000
No. of employees (nos.)	48	52	45	15	25
Direct Wages (₹)	1,72,800	1,66,400	1,53,000	36,000	53,000
HP of Machines	150	180	120	-	-
Working hours (hours)	1,240	1,600	1,200	1,440	1,440

The expenses of service department are to be allocated in the following manner:

	M	N	O	P	Q
P	30%	35%	25%	-	10%
Q	40%	25%	20%	15%	-

You are required to calculate the overhead absorption rate per hour in respect of the three production departments.

Operating Costing

4. Voyager Cabs Pvt. Ltd. is a New Delhi based cab renting company, provides cab facility on rent for cities Delhi, Agra and Jaipur to the tourists. To attract more tourists it has launched a new three days tour package for Delhi-Jaipur-Agra-Delhi. Following are the relevant information regarding the package:

Distance between Delhi to Jaipur (Km.)	274
Distance between Delhi to Agra (Km.)	242
Distance between Agra to Jaipur (Km.)	238
Price of diesel in Delhi	₹ 54 per litre
Price of diesel in Jaipur	₹ 56 per litre
Price of diesel in Agra	₹ 58 per litre
Mileage of cab per litre of diesel (Km.)	16
Chauffeur's salary	₹ 12,000 per month
Cost of the cab	₹ 12,00,000
Expected life of the cab	24,00,000 kms.
Servicing cost	₹ 30,000 after every 50,000 kilometres run.
Chauffeur's meal allowance	₹ 50 for every 200 kilometres of completed journey
Other set up and office cost	₹ 2,400 per month.

Voyager Cabs has made tie-up with fuel service centres at Agra, Jaipur and Delhi to fill diesel to its cabs on production of fuel passbook to the fuel centre. Company has a policy to get fuel filled up sufficient to reach next destination only.

You are required to calculate the price inclusive of service tax @ 12.36% to be quoted for the package if company wants to earn profit of 25% on its net takings i.e. excluding service tax.

Process & Operation Costing

5. Following details are related to the work done in Process-I of Walker Ltd. during the month of January, 2014:

	(₹)
Opening work-in progress (1,500 units)	
Materials	60,000
Labour	35,000
Overheads	30,000
Materials introduced in Process-I (35,000 units)	14,00,000
Direct Labour	3,46,000
Overheads	6,37,000
Units scrapped : 1,800 units	
Degree of completion :	
Materials	100%
Labour and overheads	80%
Closing work-in progress : 1,500 units	
Degree of completion :	
Materials	100%
Labour and overheads	80%

Units finished and transferred to Process-II : 32,000 units

Normal Loss:

5% of total input including opening work-in-progress.

Scrapped units fetch ₹ 8 per piece.

You are required to prepare :

(i) Statement of equivalent production

(ii) Statement of costs

(iii) Statement of distribution of costs and

(iv) Process-I Account, Normal and Abnormal Loss Accounts.

Standard Costing

6. Jigyasa Pharmaceuticals Ltd. is engaged in producing dietary supplement 'Funkids' for growing children. It produces 'Funkids' in a batch of 10 kgs. Standard material inputs required for 10 kgs. of 'Funkids' are as below:

Material	Quantity (in kgs.)	Rate per kg. (in ₹)
Vita-X	5	110
Proto-D	3	320
Mine-L	3	460

During the month of March, 2014, actual production was 5,000 kgs. of 'Funkids' for which the actual quantities of material used for a batch and the prices paid thereof are as under:

Material	Quantity (in kgs.)	Rate per kg. (in ₹)
Vita-X	6	115
Proto-D	2.5	330
Mine-L	2	405

You are required to calculate the following variances based on the above given information for the month of March, 2014 for Jigyasa Pharmaceuticals Ltd.:

(i) Material Cost Variance;

(ii) Material Price Variance;

(iii) Material Usage Variance;

(iv) Material Mix Variance;

(v) Material Yield Variance.

Marginal Costing

7. Maryanne Petrochemicals Ltd. is operating at 80 % capacity and presents the following information:

Break-even Sales	₹ 400 crores
P/V Ratio	30 %
Margin of Safety	₹ 120 crores

Maryanne's management has decided to increase production to 95 % capacity level with the following modifications:

(a) The selling price will be reduced by 10%.

(b) The variable cost will be increased by 2% on sales

(c) The fixed costs will increase by ₹ 50 crores, including depreciation on additions, but excluding interest on additional capital.

Additional capital of ₹ 100 crores will be needed for capital expenditure and working capital.

Required:

(i) Indicate the sales figure, with the working, that will be needed to earn ₹ 20 crores over and above the present profit and also meet 15% interest on the additional capital.

(ii) What will be the revised

(a) Break-even Sales

(b) P/V Ratio

(c) Margin of Safety

Budget and Budgetary Control

8. Concorde Ltd. manufactures two products using two types of materials and one grade of labour. Shown below is an extract from the company's working papers for the next month's budget:

	Product-A	Product-B
Budgeted sales (in units)	2,400	3,600
Budgeted material consumption per unit (in kg):		
Material-X	5	3
Material-Y	4	6
Standard labour hours allowed per unit of product	3	5

Material-X and Material-Y cost ₹ 4 and ₹ 6 per kg and labours are paid ₹ 25 per hour. Overtime premium is 50% and is payable, if a worker works for more than 40 hours a week. There are 180 direct workers.

The target productivity ratio (or efficiency ratio) for the productive hours worked by the direct workers in actually manufacturing the products is 80%. In addition the non-productive down-time is budgeted at 20% of the productive hours worked.

There are four 5-days weeks in the budgeted period and it is anticipated that sales and production will occur evenly throughout the whole period.

It is anticipated that stock at the beginning of the period will be:

Product-A	400 units
Product-B	200 units
Material-X	1,000 kgs.
Material-Y	500 kgs.

The anticipated closing stocks for budget period are as below:

Product-A	4 days sales
Product-B	5 days sales
Material-X	10 days consumption
Material-Y	6 days consumption

Required:

Calculate the Material Purchase Budget and the Wages Budget for the direct workers, showing the quantities and values, for the next month.

Contract Costing

9. Hut-to-Palace Ltd. undertook a contract in last year. In the agreement between the Hut-to-Palace Ltd. and the contractee, there is a clause stating that Hut-to-Palace Ltd. will receive total cost plus 40% as contract consideration. The following are the details of the contract as on 31st March, 2014:

	(₹)
Total expenditure to date	17,64,525
Estimated further expenditure to complete the contract	8,38,645
Value of work certified	21,07,500
Cost of work not certified	3,11,075
Progress payment received from the contractee	14,75,250

From the above information calculate the

(i) Conservative estimate of profit for the management of Hut-to-Palace Ltd.

(ii) What would be the estimated profit from the contract if management of Hut-to-Palace Ltd has come to know that the contractee has liquidity crunch and it is not able to pay further payments.

Miscellaneous

10. (a) What are the essential features of a good Cost Accounting System?

(b) Steel Heart Pvt. Ltd. is manufacturing TMT bars from MS Ingots and MS Billets. After production of TMT bars, sorting is carried out to find any defects or units do not match with standard specification. The products which do not match with the standard product specification are treated as scrap. You are required to state the treatment of the products which do not match with the product specifications in Cost Accounts.

(c) What are the essential pre-requisites of integrated accounting system?

SUGGESTED HINTS/ANSWERS

1. Store Ledger of Aditya Ltd. (Weighted Average Method)

Date	Receipts			Issues			Balance of Stock		
Feb.	Qty (kg.)	Rate (₹)	Amount (₹)	Qty (kg.)	Rate (₹)	Amount (₹)	Qty (kg.)	Rate (₹)	Amount (₹)
1	-	-	-	-	-	-	1,200	475.00	5,70,000
5	-	-	-	975	475.00	4,63,125	225	475.00	1,06,875
6	3,500	460.00	16,10,000	-	-	-	3,725	460.91	17,16,875
7	-	-	-	2,400	460.91	11,06,175	1,325	460.91	6,10,700
9	475	460.91	2,18,932	-	-	-	1,800	460.91	8,29,632
15	1,800	480.00	8,64,000	-	-	-	3,600	470.45	16,93,632
17	-	-	-	140	480.00	67,200	3,460	470.07	16,26,432
20	-	-	-	1,900	470.07	8,93,133	1,560	470.06	7,33,299
28	-	-	-	180*	470.06	84,611	1,380	470.06	6,48,688

* 180 kgs. is abnormal loss, hence it will be transferred to Costing Profit & Loss A/c.

2. Calculation of effective wages rate and weekly earnings of the workers A, B and C

Workers	A	B	C
Standard Output	96 units (8 hrs. × 2 units × 6 days)	96 units (8 hrs. × 2 units × 6 days)	96 units (8 hrs. × 2 units × 6 days)
Actual Output	132 units	108 units	96 units
Efficiency (%)	$\frac{132\text{units}}{96\text{units}} \times 100 = 137.5$	$\frac{108\text{units}}{96\text{units}} \times 100 = 112.5$	$\frac{96\text{units}}{96\text{units}} \times 100 = 100$
Daily wages Rate	₹ 360	₹ 360	₹ 360
Incentive system	Emerson's Efficiency System	Merrick differential piece rate system	Taylor's differential piece work system
Rate of Bonus	57.5% of time rate (20% + 37.5%)	20% of ordinary piece rate	25% of ordinary piece rate
Effective Wage Rate	₹ 70.875 per hour $\left(\frac{₹\ 360}{8\text{hours}} \times 157.5\%\right)$	₹ 27 per piece $\left(\frac{₹\ 360}{16\text{units}} \times 120\%\right)$	₹ 28.125 per piece $\left(\frac{₹\ 360}{16\text{units}} \times 125\%\right)$
Total weekly earnings	₹ 3,402 (8 hours × 6 days × ₹ 70.875)	₹ 2,916 (108 units × ₹ 27)	₹ 2,700 (96 units × ₹ 28.125)

3. Primary Distribution Summary

Item of cost	Basis of apportionment	Total (₹)	Production Dept.			Service Dept.	
			M (₹)	N (₹)	O (₹)	P (₹)	Q (₹)
Lease rental	Floor space (6 : 5 : 8 : 2 : 4)	35,000	8,400	7,000	11,200	2,800	5,600
Power & Fuel	HP of Machines × Working hours (93: 144 : 72)	4,20,000	1,26,408	1,95,728	97,864	-	-
Supervisor's wages*	Working hours (31 : 40 : 30)	6,400	1,964	2,535	1,901	-	-
Electricity	Light points (21: 26: 16 : 9 : 8)	5,600	1,470	1,820	1,120	630	560
Depreciation on machinery	Value of machinery (6 : 5 : 7 : 2 : 3)	16,100	4,200	3,500	4,900	1,400	2,100
Depreciation on building	Floor space (6 : 5 : 8 : 2 : 4)	18,000	4,320	3,600	5,760	1,440	2,880
Payroll expenses	No. of employees (48: 52: 45: 15: 25)	21,000	5,448	5,903	5,108	1,703	2,838
Canteen expenses	No. of employees (48: 52: 45: 15: 25)	28,000	7,265	7,870	6,811	2,270	3,784
ESI and PF contribution	Direct wages (864: 832: 765: 180: 265)	58,000	17,244	16,606	15,268	3,593	5,289
		6,08,100	1,76,719	2,44,562	1,49,932	13,836	23,051

* Wages to supervisor is to be distributed to production departments only.

Let 'P' be the overhead of service department P and 'Q' be the overhead of service department Q.

P = 13,836 + 0.15 Q

Q = 23,051 + 0.10 P

Substituting the value of Q in P we get

P = 13,836 + 0.15 (23,051 + 0.10 P)

P = 13,836 + 3,457.65 + 0.015 P

0.985 P = 17,293.65

$\therefore P$ = ₹ 17,557

$\therefore Q$ = 23,051 + 0.10 × 17,557

= ₹ 24,806.70 or ₹ 24,807

Secondary Distribution Summary

Particulars	Total	M	N	O
	(₹)	(₹)	(₹)	(₹)
Allocated and Apportioned over-heads as per primary distribution	5,71,213	1,76,719	2,44,562	1,49,932
P (90% of ₹17,557)	15,801	5,267	6,145	4,389
Q (85% of ₹24,807)	21,086	9,923	6,202	4,961
		1,91,909	2,56,909	1,59,282

Overhead rate per hour

	M	N	O
Total overheads cost (₹)	1,91,909	2,56,909	1,59,282
Working hours	1,240	1,600	1,200
Rate per hour (₹)	154.77	160.57	132.74

4. Calculation of Price of the Delhi-Jaipur-Agra-Delhi tour package

Particulars	Amount (₹)	Amount (₹)
Diesel Cost (Working Note-2)		2,635.00
Servicing Cost $\left(\frac{₹30,000}{50,000 kms} \times 754 kms.\right)$		452.40
Chauffeur's meal cost (three 200 km. completed journey × ₹ 50)		150.00
Other Allocable costs:		
Depreciation $\left(\frac{₹12,00,000}{24,00,000 kms} \times 754 kms.\right)$	377.00	
Other set-up and office cost $\left(\frac{₹2,400}{30 days} \times 3 days\right)$	240.00	

Chauffeur's salary $\left(\frac{₹12,000}{30 days} \times 3 days\right)$	1,200.00	1,817.00
Total Cost		5,054.40
Add: Profit (25% of net takings or 1/3rd of total cost)		1,684.80
		6,739.20
Add: Service Tax @12.36%		832.97
Price of the package (inclusive of service tax)		7,572.17

Working Notes

(1) Total distance of journey

From	To	Distance (in Km.)
Delhi	Jaipur	274
Jaipur	Agra	238
Agra	Delhi	242
Total Distance		754

(2) Cost of Diesel

From	To	Distance (in Km.)	Price of diesel per litre (₹)	Total diesel Cost (₹)
I	II	III	IV	V= (III ÷ 16 km) × IV
Delhi	Jaipur	274	54	924.75
Jaipur	Agra	238	56	833.00
Agra	Delhi	242	58	877.25
Total cost				2,635.00

5. (i) Statement of Equivalent Production

Input	Units	Output	Units	Equivalent production			
				Material		Labour & Overheads	
				%	Units	%	Units
Opening WIP	1,500	Completed and transfer to Process-II	32,000	100	32,000	100	32,000
Units introduced	35,000	Normal loss (5% of 36,500)	1,825		–		–
		Abnormal loss	1,175	100	1,175	80	940
		Closing WIP	1,500	100	1,500	80	1,200
	36,500		36,500		34,675		34,140

(ii) Statement of Cost

Details	Cost at the beginning of process	Cost added	Total cost	Equivalent Units	Cost per unit
	(₹)	(₹)	(₹)	(units)	(₹)
Material *Less:* Value of normal loss (1,825 units × ₹ 8)	60,000	14,00,000	14,60,000 (14,600) 14,45,400	34,675	41.6842
Labour	35,000	3,46,000	3,81,000	34,140	11.1599
Overheads	30,000	6,37,000	6,67,000	34,140	19.5372
					72.3813

(iii) Statement of distribution of costs:

(a) Completed and transferred to Process- II : 32,000 units @ ₹ 72.3813	₹ 23,16,202
(b) Abnormal loss 1,175 units	
Materials 1,175 units @ ₹ 41.6842	₹ 48,979
Labour 940 units @ ₹ 11.1599	₹ 10,491
Overheads 940 units @ ₹ 19.5372	₹ 18,365
	₹ 77,835
(c) Closing WIP 1,500 units	
Materials 1,500 units @ ₹ 41.6842	₹ 62,526
Labour 1,200 units @ ₹ 11.1599	₹ 13,392
Overheads 1,200 units @ ₹ 19.572	₹ 23,445
	₹ 99,363

(iv) Process-I Account

Dr. Cr.

Particulars	Units	Amount	Particulars	Units	Amount
To Opening WIP	1,500	1,25,000*	By Normal Loss	1,825	14,600
To Material introduced	35,000	14,00,000	By Abnormal loss	1,175	77,835
To Direct labour		3,46,000	By Process-II A/c	32,000	23,16,202
To Overheads		6,37,000	By Closing WIP	1,500	99,363
	36,500	25,08,000		36,500	25,08,000

*Materials + Labour + Overheads = ₹ (60,000 + 35,000 + 30,000) = ₹ 1,25,000.

Normal Loss Account

Dr. Cr.

Particulars	Units	Amount	Particulars	Units	Amount
To Process-I A/c	1,825	14,600	By Cost Ledger Control A/c	1,825	14,600
	1,825	14,600		1,825	14,600

Abnormal Loss Account

Dr. Cr.

Particulars	Units	Amount	Particulars	Units	Amount
To Process-I A/c	1,175	77,835	By Cost Ledger Control A/c (1,175 units × ₹ 8)	1,175	9,400
			By Costing Profit and Loss A/c		68,435
	1,175	77,835		1,175	77,835

6.

Material	SQ* × SP	AQ** × SP	AQ** × AP	RSQ*** × SP
Vita-X	₹ 2,75,000 (2,500 kg. × ₹ 110)	₹ 3,30,000 (3,000 kg. × ₹ 110)	₹ 3,45,000 (3,000 kg. × ₹ 115)	₹ 2,62,460 (2,386 kg. × ₹ 110)
Proto-D	₹ 4,80,000 (1,500 kg. × ₹ 320)	₹ 4,00,000 (1,250 kg. × ₹ 320)	₹ 4,12,500 (1,250 kg. × ₹ 330)	₹ 4,58,240 (1,432 kg. × ₹ 320)
Mine-L	₹ 6,90,000 (1,500 kg. × ₹ 460)	₹ 4,60,000 (1,000 kg. × ₹ 460)	₹ 4,05,000 (1,000 kg. × ₹ 405)	₹ 6,58,720 (1,432 kg. × ₹ 460)
Total	₹ 14,45,000	₹ 11,90,000	₹ 11,62,500	₹ 13,79,420

** Standard Quantity of materials for actual output :*

Vita-X	$= \frac{5\text{kgs.}}{10\text{kgs}} \times 5{,}000\text{kgs.} = 2{,}500\text{kgs.}$
Proto-D	$= \frac{3\text{kgs.}}{10\text{kgs}} \times 5{,}000\text{kgs.} = 1{,}500\text{kgs.}$
Mine-L	$= \frac{3\text{kgs.}}{10\text{kgs}} \times 5{,}000\text{kgs.} = 1{,}500\text{kgs.}$

** *Actual Quantity of Material used for actual output:*

Vita-X	$= \frac{6\text{kgs.}}{10\text{kgs}} \times 5{,}000\text{kgs.} = 3{,}000\text{kgs.}$
Proto-D	$= \frac{2.5\text{kgs.}}{10\text{kgs}} \times 5{,}000\text{kgs.} = 1{,}250\text{kgs.}$
Mine-L	$= \frac{2\text{kgs.}}{10\text{kgs}} \times 5{,}000\text{kgs.} = 1{,}000\text{kgs.}$

***Revised Standard Quantity (RSQ):*

Vita-X	$= \frac{5\text{kgs.}}{11\text{kgs}} \times 5{,}250\text{kgs.} = 2{,}386\text{kgs.}$
Proto-D	$= \frac{3\text{kgs.}}{11\text{kgs}} \times 5{,}250\text{kgs.} = 1{,}432\text{kgs.}$
Mine-L	$= \frac{3\text{kgs.}}{11\text{kgs}} \times 5{,}250\text{kgs.} = 1{,}432\text{kgs.}$

(i) Material Cost Variance = (Std. Qty. × Std. Price) – (Actual Qty. × Actual Price)

Or = (SQ × SP) – (AQ × AP)

Vita-X	= ₹ 2,75,000 - ₹ 3,45,000	= ₹ 70,000	(A)
Proto-D	= ₹ 4,80,000 - ₹ 4,12,500	= ₹ 67,500	(F)
Mine-L	= ₹ 6,90,000 - ₹ 4,05,000	= ₹ 2,85,000	(F)
		₹ 2,82,500	(F)

(ii) Material Price Variance = Actual Quantity (Std. Price – Actual Price)

= (AQ × SP) – (AQ × AP)

Vita-X	= ₹ 3,30,000 - ₹ 3,45,000	= ₹ 15,000	(A)
Proto-D	= ₹ 4,00,000 - ₹ 4,12,500	= ₹ 12,500	(A)
Mine-L	= ₹ 4,60,000 - ₹ 4,05,000	= ₹ 55,000	(F)
		₹ 27,500	(F)

(iii) Material Usage Variance = Std. Price (Std. Qty. – Actual Qty.)

Or = (SQ × SP) – (AQ × SP)

Vita-X	= ₹ 2,75,000 - ₹ 3,30,000	= ₹ 55,000	(A)
Proto-D	= ₹ 4,80,000 - ₹ 4,00,000	= ₹ 80,000	(F)
Mine-L	= ₹ 6,90,000 - ₹ 4,60,000	= ₹ 2,30,000	(F)
		₹ 2,55,000	(F)

(iv) Material Mix Variance = Std. Price (Revised Std. Qty. – Actual Qty.)

	Or = (RSQ × SP) – (AQ × SP)		
Vita-X	= ₹ 2,62,460 - ₹ 3,30,000	= ₹ 67,540	(A)
Proto-D	= ₹ 4,58,240 - ₹ 4,00,000	= ₹ 58,240	(F)
Mine-L	= ₹ 6,58,720 - ₹ 4,60,000	= ₹ 1,98,720	(F)
		= ₹ 1,89,420	(F)

(v) Material Yield Variance = Std. Price (Std. Qty. – Revised Std. Qty.)

	Or = (SQ × SP) – (RSQ × SP)		
Vita-X	= ₹ 2,75,000 - ₹ 2,62,460	= ₹ 12,540	(F)
Proto-D	= ₹ 4,80,000 - ₹ 4,58,240	= ₹ 21,760	(F)
Mine-L	= ₹ 6,90,000 - ₹ 6,58,720	= ₹ 31,280	(F)
		= ₹ 65,580	(F)

7. Working Notes:

1. Total Sales = Break -even Sales + Margin of Safety
   = ₹ 400 crores + ₹ 120 crores
   = ₹ 520 crores
2. Variable Cost = Total Sales × (1- P/V Ratio)
   = ₹ 520 crores × (1 – 0.3)
   = ₹ 364 crores
3. Fixed Cost = Break-even Sales × P/V Ratio
   = ₹ 400 crores × 30%
   = ₹ 120 crores
4. Profit = Total Sales – (Variable Cost + Fixed Cost)
   = ₹ 520 crores – (₹ 364 crores + ₹ 120 crores)
   = ₹ 36 crores

(i) Revised Sales figure to earn profit of ₹ 56 crores (i.e. ₹ 36 crores + ₹ 20 crores)

$$\text{Revised Sales} = \frac{\text{Revised Fixed Cost} * + \text{Desired Profit}}{\text{Revised P / V Ratio} * *}$$

$$= \frac{₹185\text{ crores} + ₹56\text{ crores}}{28\%}$$

= ₹ 860.71 Crores

*Revised Fixed Cost = Present Fixed Cost + Increment in fixed cost + Interest on additional Capital

= ₹ 120 crores + ₹ 50 crores + 15% of ₹ 100 crores

= ₹ 185 crores

**Revised P/V Ratio : Let current selling price per unit be ₹ 100.

Therefore, Reduced selling price per unit = ₹ 100 × 90% = ₹ 90

Revised Variable Cost on Sales = 70%+ 2% = 72%

Variable Cost per unit = ₹ 90 × 72% = ₹ 64.80

Contribution per unit = ₹ 90 - ₹ 64.80 = ₹ 25.20

Revised P/V Ratio $= \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{₹ 25.2}{₹ 90} \times 100 = 28\%$

(ii) (a) Revised Break-even Sales $= \frac{\text{Fixed Cost}}{\text{P/V Ratio}} \times 100$

$= \frac{₹ 185 \text{ crores}}{28\%} = ₹ 660.71 \text{ crores}$

(b) Revised P/V Ratio = 28 % (as calculated above)

(c) Revised Margin of safety = Total Sales – Break-even Sales

= ₹ 860.71 crores - ₹ 660.71 crores

= ₹ 200 crores.

8. Number of days in budget period = 4 weeks × 5 days = 20 days

Number of units to be produced

	Product-A (units)	Product-B (units)
Budgeted Sales	2,400	3,600
Add: Closing stock $\left(\frac{2,400 \text{ units}}{20 \text{ days}} \times 4 \text{ days}\right)$ $\left(\frac{3,600 \text{ units}}{20 \text{ days}} \times 5 \text{ days}\right)$	480	900
Less: Opening stock	400	200
	2,480	4,300

(i) Material Purchase Budget

	Material-X (Kg.)	Material-Y (Kg.)
Material required :		
Product-A	12,400 (2,480 units × 5 kg.)	9,920 (2,480 units × 4 kg.)
Product-B	12,900 (4,300 units × 3 kg.)	25,800 (4,300 units × 6 kg.)
	25,300	35,720
Add: Closing stock $\left(\frac{25,300\text{kgs.}}{20\text{days}} \times 10\text{days}\right)$ $\left(\frac{35,720\text{kgs.}}{20\text{days}} \times 6\text{days}\right)$	12,650	10,716
Less: Opening stock	1,000	500
Quantity to be purchased	36,950	45,936
Rate per kg. of Material	₹ 4	₹ 6
Total Cost	₹ 1,47,800	₹ 2,75,616

(ii) Wages Budget

	Product-A (Hours)	Product-B (Hours)
Units to be produced	2,480 units	4,300 units
Standard hours allowed per unit	3	5
Total Standard Hours allowed	7,440	21,500
Productive hours required for production	$\frac{7,440\text{hours}}{80\%} = 9,300$	$\frac{21,500\text{hours}}{80\%} = 26,875$
Add: Non-Productive down time	1,860 hours. (20% of 9,300 hours)	5,375 hours. (20% of 26,875 hours)
Hours to be paid	11,160	32,250

Total Hours to be paid

= 43,410 hours (11,160 + 32,250)

Hours to be paid at normal rate = 4 weeks × 40 hours × 180 workers = 28,800 hours

Hours to be paid at premium rate = 43,410 hours – 28,800 hours = 14,610 hours

Total wages to be paid = 28,800 hours × ₹ 25 + 14,610 hours × ₹ 37.5

= ₹ 7,20,000 + ₹ 5,47,875

= ₹ 12,67,875

9. Working Notes:

1. Calculation of Notional Profit:

	(₹)
Value of work certified	21,07,500
Cost of work not certified	3,11,075
	24,18,575
Less: Total expenditure to date	17,64,525
Notional Profit	6,54,050

2. Calculation of total Contract Price:

	(₹)
Total expenditure to date	17,64,525
Estimated further expenditure	8,38,645
Total estimated cost	26,03,170
Add: Margin@40%	10,41,268
Total contract Price	36,44,438

3. Calculation of percentage (%) of contract completion:

$$= \frac{\text{Value of work certified}}{\text{Total Contract Price}} \times 100$$

$$= \frac{₹\,21,07,500}{₹\,36,44,438} \times 100 = 57.83\%$$

(i) Conservative estimate of profit for the management

$$= \frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Value of Work of certified}}$$

$$= \frac{2}{3} \times ₹\,6,54,050 \times \frac{₹\,14,75,250}{₹\,21,07,500} = ₹\,3,05,223$$

(ii) When the management of Hut-to-Palace appreciates the fact that the contractee is having liquidity crunch and it may not be able to pay further cash Payment. In this situation, following the concept of conservatism it has to recognise loss if any immediately i.e.

Cash Received – Expenditure to date	= Profit/ (Loss)
₹ 14,75,250 - ₹ 17,64,525	= (₹ 2,89,275)

10. (a) The essential features, which a good Cost Accounting System should possess, are as follows:

(a) Informative and Simple: Cost Accounting System should be tailor-made, practical, simple and capable of meeting the requirements of a business concern. The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.

(b) Accuracy: The data to be used by the Cost Accounting System should be accurate; otherwise it may distort the output of the system and a wrong decision may be taken.

(c) Support from Management and subordinates: Necessary cooperation and participation of executives from various departments of the concern is essential for developing a good system of Cost Accounting.

(d) Cost-Benefit: The Cost of installing and operating the system should justify the results.

(e) Procedure: A carefully phased programme should be prepared by using network analysis for the introduction of the system.

(f) Trust: Management should have faith in the Costing System and should also provide a helping hand for its development and success.

(b) Scrap has been defined as the incidental residue from certain types of manufacture, usually of small amount and low value, recoverable without further processing.

Scrap may be treated in cost accounts in the following ways:-

(i) When the scrap value is negligible: It may be excluded from costs. In other words, the cost of scrap is borne by good units and income from scrap is treated as other income.

(ii) When the scrap value is not identifiable to a particular process or job: The sales value of scrap net of selling and distribution cost, is deducted from overhead to reduce the overhead rate. A variation of this method is to deduct the net realisable value from material cost.

(iii) When scrap is identifiable with a particular job or process and its value is significant: The scrap account should be charged with full cost. The credit is given to the job or process concerned. The profit or loss in the scrap account, on realisation, will be transferred to the Costing Profit and Loss Account.

(c) Essential pre-requisites of Integrated Accounting System:

The essential pre-requisites of integrated accounting system include the following:

1. The management's decision about the extent of integration of the two sets of books. Some concerns find it useful to integrate upto the stage of primary cost or factory cost while other prefer full integration of the entire accounting records.

2. A suitable coding system must be made available so as to serve the accounting purposes of financial and cost accounts.
3. An agreed routine, with regard to the treatment of provision for accruals, prepaid expenses, other adjustment necessary for preparation of interim accounts.
4. Perfect coordination should exist between the staff responsible for the financial and cost aspects of the accounts and an efficient processing of accounting documents should be ensured.

Under this system there is no need for a separate cost ledger. Of course, there will be a number of subsidiary ledgers; in addition to the useful Customers Ledger and the Bought Ledger, there will be : (a) Stores Ledger; (b) Stock Ledger and (c) Job Ledger.

PART II: FINANCIAL MANAGEMENT

QUESTIONS

1. Answer the following, supporting the same with reasoning/working notes:

   (a) "Floating-rate bonds are designed to minimize the holders' interest rate risk; while convertible bonds are designed to give the investor the ability to share in the price appreciation of the company's stock." Do you agree with this statement?

   (b) Should companies use their weighted average cost of capital (WACC) as the discount rate when assessing the acceptability of new projects?

   (c) The earnings of Alpha Limited were ₹ 3 per share in year 1. They increased over a 10 year period to ₹ 4.02. You are required to compute the rate of growth or compound annual rate of growth of the earnings per share.

   (d) "An EBIT-EPS indifference analysis chart is used for determining the impact of a change in sales on EBIT." Comment.

   (e) The trade terms "2/15, net 30" indicate that a 2 percent discount is offered if payment is made within 30 days. Comment.

Management of Working Capital

2. The present credit terms of Beta Limited are 1/10 net 30. Its annual sales are ₹ 80 lakhs, 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 per cent. The proportion of sales on which customers currently take discount is 0.5. Beta Limited is considering relaxing its discount terms to 2/10 net 30. Such relaxation is expected to increase sales by ₹ 5 lakhs, 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 Beta Limited's profit? Take year as 360 days.

Investment Decisions

3. Gamma Limited is considering building an assembly plant and the company has two options, out of which it wishes to choose the best plant. The projected output is 10,000 units per month. The following data is available:

			₹
		Plant A	*Plant B*
Initial Cost		60,00,000	44,00,000
Direct Labour Cost p.a.	(1st Shift)	30,00,000	15,00,000
	(Second Shift)	-	19,00,000
Overhead	(per year)	5,00,000	4,20,000

Both the plants have an expected life of 10 years after which there will be no salvage value. The cost of capital is 10 percent. The present value of an ordinary annuity of Re. 1 for 10 years @ 10 percent is 6.1446. Ignore effect of taxation.

You are required to determine:

(a) What would be the desirable choice?

(b) What other important elements are to be considered before the final decision is taken?

Financing Decisions

4. The following figures of Theta Limited are presented as under:

		₹
Earnings before Interest and Tax		23,00,000
Less: Debenture Interest @ 8%	80,000	
Long Term Loan Interest @ 11%	2,20,000	3,00,000
		20,00,000
Less: Income Tax		10,00,000
Earnings after tax		10,00,000

No. of Equity Shares of ₹ 10 each	5,00,000
EPS	₹ 2
Market Price of Share	₹ 20
P/E Ratio	10

The company has undistributed reserves and surplus of ₹ 20 lakhs. It is in need of ₹ 30 lakhs to pay off debentures and modernise its plants. It seeks your advice on the following alternative modes of raising finance.

Alternative 1 - Raising entire amount as term loan from banks @ 12%.

Alternative 2 - Raising part of the funds by issue of 1,00,000 shares of ₹ 20 each and the rest by term loan at 12 percent.

The company expects to improve its rate of return by 2 percent as a result of modernisation, but P/E ratio is likely to go down to 8 if the entire amount is raised as term loan.

(i) Advise the company on the financial plan to be selected.

(ii) If it is assumed that there will be no change in the P/E ratio if either of the two alternatives is adopted, would your advice still hold good?

Financing Decisions

5. The following is an extract from the financial statements of Zeta Limited:

	Amount (₹ lakhs)
Operating Profit	105.0
Less: Interest on Debentures	33.0
Earnings before Taxes	72.0
Less: Income Tax (35%)	25.2
Earnings after Taxes	46.8
Equity Share Capital (shares of ₹ 10 each)	200.0
Reserves and Surplus	100.0
15% Non-Convertible Debentures (of ₹ 100 each)	220.0
	520.0

The market price per equity share is ₹ 12 and per debenture is ₹ 93.75.

You are required to calculate:

(a) The earnings per share.

(b) The percentage cost of capital to the company for debentures and the equity.

Financial Analysis and Planning

6. Bodhi Limited provides you the following information. You are required to prepare cash flow statement as at 31st December, 2013 by using direct method:

Balance Sheets

Liabilities	*2012*	*2013*	*Assets*	*2012*	*2013*
Share Capital	5,00,000	5,00,000	Fixed Assets	8,50,000	10,00,000
Profit & Loss A/c	4,25,000	5,00,000	Stock	3,40,000	3,50,000
Long Term Loans	5,00,000	5,30,000	Debtors	3,60,000	3,30,000
Creditors	1,75,000	2,00,000	Cash	30,000	35,000
			Bills Receivable	20,000	15,000
	16,00,000	17,30,000		16,00,000	17,30,000

Income Statement for the year ended 31st December, 2013

Sales	20,40,000
Less: Cost of Sales	13,60,000
Gross Profit	6,80,000

Less: Operating Expenses:	
Administrative Expenses	(2,30,000)
Depreciation	(1,10,000)
Operating Profit	3,40,000
Add: Non-Operating Incomes (dividend received)	25,000
	3,65,000
Less: Interest Paid	(70,000)
	2,95,000
Less: Income Tax	1,30,000
Profit after Tax	1,65,000

Statement of Retained Earnings

Opening Balance	4,25,000
Add: Profit	1,65,000
	5,90,000
Less: Dividend Paid	90,000
Closing Balance	5,00,000

Investment Decisions

7. Fibroplast Limited, a toy manufacturing company, is considering replacing an older machine which was fully depreciated for tax purposes with a new machine costing ₹ 40,000. The new machine will be depreciated over its eight-year life. It is estimated that the new machine will reduce labour costs by ₹ 8,000 per year. The management believes that there will be no change in other expenses and revenues of the firm due to the machine. The company requires an after-tax return on investment of 10 per cent. Its rate of tax is 35 per cent. The company's income statement for the current year is given for other information.

   Income statement for the current year:

		₹
Sales		5,00,000
Costs:		
Materials	1,50,000	
Labour	2,00,000	
Factory and Administrative	40,000	
Depreciation	40,000	4,30,000

Net Income before Taxes		70,000
Taxes (0.35)		24,500
Earnings after Taxes		45,500

Should the Fibroplast Limited buy the new machine? You may assume the company follows straight-line method of depreciation and the same is allowed for tax purposes.

Financial Analysis and Planning

8. Following is the abridged Balance Sheet of Ganesha Limited:

Balance Sheet as on 31-3-2013

Liabilities	₹	*Assets*		₹
Share Capital	1,00,000	Land and Buildings		80,000
Profit and Loss Account	17,000	Plant and Machinery	50,000	
Current Liabilities	40,000	*Less*: Depreciation	15,000	35,000
				1,15,000
		Current Assets		
		Stock	21,000	
		Debtors	20,000	
		Bank	1,000	42,000
Total	1,57,000	Total		1,57,000

With the help of the additional information furnished below, you are required to prepare Trading and Profit & Loss Account and a Balance Sheet as on 31st March, 2014:

(i) The company went in for reorganisation of capital structure, with share capital remaining the same as follows:

Share Capital	50%
Other Shareholders' Funds	15%
5% Debentures	10%
Trade Creditors	25%

Debentures were issued on 1st April, interest being paid annually on 31st March.

(ii) Land and Buildings remained unchanged. Additional plant and machinery has been bought and a further ₹ 5,000 depreciation written off.

(The total fixed assets then constituted 60% of total gross fixed and current assets.)

(iii) Working capital ratio was 8 : 5.

(iv) Quick assets ratio was 1 : 1.

(v) The debtors (four-fifth of the quick assets) to sales ratio revealed a credit period of 2 months. There were no cash sales.

(vi) Return on net worth was 10%.

(vii) Gross profit was at the rate of 15% of selling price.

(viii) Stock turnover was eight times for the year.

Ignore Taxation.

Management of Working Capital

9. The following are the ratios relating to the activities of Technopak Limited:

Debtors Velocity	3 months
Stock Velocity	8 months
Creditors Velocity	2 months
Gross Profit Ratio	25 per cent

Gross profit for the current year ended December 31 amounts to ₹ 4,00,000. Closing stock of the year is ₹ 10,000 above the opening stock. Bills receivables amount to ₹ 25,000 and bills payable to ₹ 10,000. Calculate: (a) Sales, (b) Sundry Debtors, (c) Sundry Creditors.

10. Answer the following:

(a) Funds Flow Statement versus Cash Flow Statement.

(b) Basic Functions of Financial Management.

(c) Advantages of Debt Securitisation.

SUGGESTED ANSWERS / HINTS

1. (a) Floating rate bonds allow the investor to earn a rate of interest income tied to current interest rates, thus negating one of the major disadvantages of fixed income investments while Convertible bonds allow the investor to benefit from the appreciation of the stock price, either by converting to stock or holding the bond, which will increase in price as the stock price increases.

(b) When we mention the WACC in this context, we can assume we are talking about an historic WACC, i.e. one referring to the cost of funds already raised. There are certain conditions that must be met in order for it to be appropriate to use an historic cost of capital to appraise new projects, as follows:

- The new project must have a similar level of risk to the average risk of a company's existing projects;

- The amount of finance needed for the new project must be small relative to the amount of finance already raised.
- The company must be intending to finance the new project by using a similar financing mix to its historical financing mix.

(c) Compound Annual Rate of Growth in Earnings per Share

$F_n = P \times FVIF_{i, n}$

$$FVIF_{i, n} = \frac{F_n}{P}$$

$$FVIF_{i, 10} = \frac{₹\ 4.02}{₹\ 3} = 1.340$$

An FVIF of 1.340 at 10 years is at 3 percent interest. The compound annual rate of growth in earnings per share is, therefore, 3 percent.

(d) The statement is incorrect as an EBIT-EPS indifference analysis chart is used for examining EPS results for alternative financing plans at varying EBIT levels.

(e) The statement is incorrect. The trade terms "2/15, net 30" indicate that a 2 percent discount is offered if payment is made within 15 days.

2. Working Notes

Calculation of Reduction in Investment in Receivables (Rs.)

Present Investment in Receivables $\left[₹\ 80\ \text{lakhs} \times 0.95 \times \frac{20\ \text{days}}{360\ \text{days}}\right]$	4,22,222
Proposed Investment in Receivables $\left[(₹\ 80\ \text{lakhs} \times 0.95) + (₹\ 5\ \text{lakhs} \times 0.85)\right] \times \frac{14\ \text{days}}{360\ \text{days}}$	3,12,083
Reduction in Investment in Receivables	1,10,139

Calculation of Increase in Discount (₹)

Present Discount	(₹ 80 lakhs × 1/100 × 0.5)	40,000
Proposed Discount	(₹ 85 lakhs × 2/100 × 0.8)	1,36,000
Net Increase in Discount		96,000

Statement Showing Evaluation of Effect of Relaxing the Discount Policy on Company's Profit

		(₹)
Incremental Revenue:		
Increase in Contribution	(₹ 5 lakhs ×15/100)	75,000
Cost of Savings on Investment In Receivables	(₹ 1,10,139 lakhs × 10/100)	11,014
Total Incremental Cost	Total (A)	86,014
Net Increase in Discount	(B)	96,000
Incremental Loss		9,986

Analysis: There will be an incremental loss by relaxing the discount policy. Hence, it is not suggested to release the Beta Limited's present discount policy.

3. (A) Computation of Differential Cash Flow

			(₹)
	Plant A	*Plant B*	*Differential Cash Outflow*
Direct Labour Cost:			
1st shift	30,00,000	15,00,000	(15,00,000)
2nd shift		19,00,000	19,00,000
Overhead	5,00,000	4,20,000	(80,000)
Net Saving for using Plant A			3,20,000

Present value of net saving of (₹ 3,20,000 × 6.1446) = ₹ 19,66,272 for Plant A @ 10% (cost of capital).

(B) Additional Cash Outlay for Plant A over Plant B

	₹
Cost of Plant A	60,00,000
Cost of Plant B	44,00,000
Additional Outlay for using Plant A	16,00,000

Analysis: The net saving for the company in choosing Plant A = ₹ 19,66,272 – ₹ 16,00,000 = ₹ 3,66,272. Hence, Plant A should be implemented.

4. Working Notes:

(i) Capital Employed

		₹
Equity Capital	(5,00,000 shares of ₹ 10 each)	50,00,000
Debentures	(₹ 80,000×100/8)	10,00,000
Term Loan	(₹ 2,20,000×100/11)	20,00,000
Reserves and Surplus		20,00,000
Total Capital Employed		1,00,00,000

(ii) Rate of Return

Earnings before Interest and Tax = ₹ 23,00,000

$$\text{Rate of Return on Capital Employed} = \frac{₹\ 23,00,000}{₹\ 1,00,00,000} \times 100 = 23\%$$

(iii) Expected Rate of Return after Modernisation = 23% + 2% = 25%

Alternative 1: Raise Entire Amount as Term Loan

	₹
Original Capital Employed	1,00,00,000
Less: Debentures	10,00,000
	90,00,000
Add: Additional Term Loan	30,00,000
Revised Capital Employed	1,20,00,000

		₹
EBIT on Revised Capital Employed (@ 25% on ₹ 120 lakhs)		30,00,000
Less: Interest		
Existing Term Loan (@11%)	2,20,000	
New Term Loan (@12%)	3,60,000	5,80,000
		24,20,000
Less: Income Tax (@ 50%)		12,10,000
Earnings after Tax (EAT)		12,10,000

$$\text{Earnings per Share (EPS)} = \frac{\text{EAT}}{\text{No. of Equity Shares}} = \frac{₹\ 12,10,000}{5,00,000\ \text{Shares}} = ₹\ 2.42$$

$$\text{P/E Ratio} = \frac{\text{Market Price per Share}}{\text{E P S}} = 8$$

$$8 = \frac{\text{Market Price}}{₹\ 2.42}$$

Market Price = ₹ 19.36

Alternative 2: Raising Part by Issue of Equity Shares and Rest by Term Loan

		₹
Earnings before Interest and Tax (@ 25% on Revised Capital Employed i.e., ₹ 120 lakhs)		30,00,000
Less: Interest		
Existing Term Loan @ 11%	2,20,000	
New Term Loan @ 12%	1,20,000	3,40,000
		26,60,000
Less: Income Tax @ 50%		13,30,000
Earnings after Tax		13,30,000

$$\text{EPS} = \frac{₹\ 13,30,000}{5,00,000\ (\text{existing}) + 1,00,000\ (\text{new})} = ₹\ 2.217$$

P/E Ratio = 10

Market Price = ₹ 22.17

Advise:

(i) From the above computations it is observed that the market price of Equity Shares is maximised under Alternative 2. Hence this alternative should be selected.

(ii) If, under the two alternatives, the P/E ratio remains constant at 10, the market price under Alternative 1 would be ₹ 24.20. Then Alternative 1 would be better than Alternative 2.

5. (a) EPS = EAT/Number of shares = ₹ 46.8 lakhs / 20 lakhs = ₹ 2.34

(b) (i) Cost of Debentures (book value) = ₹ 33 lakhs (1 – 0.35) / ₹ 220 lakhs = 9.75 per cent

(ii) Cost of Debentures (market value) = ₹ 15 (1 – 0.35) / ₹ 93.75 = 10.4 per cent

(iii) Cost of Equity (earnings-approach) = EPS/MPS = ₹ 2.34/₹ 12 = 19.5 per cent.

(Note: Cost of debentures based on market value is more appropriate).

6. Cash Flow Statement for the year ended December 31, 2013

Cash Flows from Operating Activities	₹	₹
Received from Customers: Sales		20,40,000
Add: Decrease in Debtors	30,000	
Decrease in B/R	5,000	35,000
		20,75,000
Less: Payments to Suppliers: Cost of Sales	13,60,000	
Add: Increase in Stock	10,000	
Less: Increase in Creditors	(25,000)	(13,45,000)
		7,30,000
Less: Payment for Expenses	(2,30,000)	
Tax Paid	(1,30,000)	(3,60,000)
Cash Provided by Operating Activities		3,70,000
Cash Flows from Investing Activities		
Purchase of Fixed Assets (10,00,000 + 1,10,000 – 8,50,000)	(2,60,000)	
Dividend on Investments	25,000	
Cash Used in Investing Activities		(2,35,000)
Cash Flows from Financing Activities		
Long Term Loan taken	30,000	
Interest Paid	(70,000)	
Dividend Paid	(90,000)	
Cash Flows from Financing Activities		(1,30,000)
Net Increase in Cash during the year		5,000
Add: Opening Cash Balance		30,000
Closing Cash Balance		35,000

7. Cash Inflows:

(i)	Present Earnings after Taxes		₹ 45,500
	Add: Depreciation		40,000
	Present CFAT		85,500
(ii)	Estimated CFAT, if the New Machine is Purchased:		
	Sales		5,00,000

	Costs:		
	Material	₹ 1,50,000	
	Labour	1,92,000	
	Factory and Administrative	40,000	
	Depreciation (including ₹ 5,000 on new machine)	45,000	4,27,000
	Net Income before Taxes (@ 35 %)		73,000
	Taxes		25,550
	Earnings after Taxes		47,450
	Add: Depreciation		45,000
	CFAT (expected)		92,450
(iii)	Differential cash flow: (₹ 92,450 – ₹ 85,500)		6,950

(iv)	*Determination of NPV:*			
	Years	*CFAT*	*PV factor (0.10)*	*Total PV*
	1-8	₹ 6,950	5.335	₹ 37,078
	Less: Cost of New Machine			40,000
	NPV			(2,922)

Advise: Since the NPV is negative, the new machine should not be purchased.

8. Preparation of Financial Statements

Particulars		*%*	*(₹)*
Share capital		50%	1,00,000
Other shareholders funds		15%	30,000
5% Debentures		10%	20,000
Trade creditors		25%	50,000
	Total	100%	2,00,000

Land and Buildings = ₹ 80,000

Total Liabilities = Total Assets

₹ 2,00,000 = Total Assets

Fixed Assets = 60% of Total Gross Fixed Assets and Current Assets

= ₹ 2,00,000 × 60/100

= ₹ 1,20,000

Calculation of Additions to Plant & Machinery

	₹
Total Fixed Assets	1,20,000
Less: Land and Building	80,000
Plant and Machinery (after providing depreciation)	40,000
Depreciation on Machinery up to 31-3-2013	15,000
Add: Further Depreciation	5,000
Total	20,000

Current Assets = Total Assets – Fixed Assets

= ₹ 2,00,000 – ₹ 1,20,000 = ₹ 80,000

Calculation of Stock

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Stock}}{\text{Current Liabilities}} = 1$$

$$= \frac{₹\ 80,000 - \text{Stock}}{₹\ 50,000} = 1$$

₹ 50,000 = ₹ 80,000 – Stock

Stock = ₹ 80,000 – ₹ 50,000

= ₹ 30,000

Debtors = 4/5th of Quick Assets

= (₹ 80,000 – 30,000) × 4/5

= ₹ 40,000

Debtors Turnover Ratio

$$= \frac{40,000 \times 12}{\text{Credit Sales}} = 2 \text{ months}$$

2 Credit Sales = 4,80,000

Credit Sales = 4,80,000/2

= 2,40,000

Gross Profit (15% of Sales)

₹ 2,40,000 × 15/100 = ₹ 36,000

Return on Networth (profit after tax)

Networth = ₹ 1,00,000 + ₹ 30,000

= ₹ 1,30,000

Net Profit = ₹ 1,30,000 × 10/100 = ₹ 13,000

Debenture Interest = ₹ 20,000 × 5/100 = ₹ 1,000

Projected Profit and Loss Account for the year ended 31-3-2014

To Cost of Goods Sold	2,04,000	By Sales	2,40,000
To Gross Profit	36,000		
	2,40,000		2,40,000
To Debenture Interest	1,000	By Gross Profit	36,000
To Administration and Other Expenses	22,000		
To Net Profit	13,000		
	36,000		36,000

Ganesha Limited
Projected Balance Sheet as on 31st March, 2014

Liabilities	₹	*Assets*		₹
Share Capital	1,00,000	Fixed Assets		
Profit and Loss A/c	30,000	Land & Buildings		80,000
(17,000+13,000)		Plant & Machinery	60,000	
5% Debentures	20,000	*Less*: Depreciation	20,000	40,000
Current Liabilities		Current Assets:		
		Stock	30,000	
Trade Creditors	50,000	Debtors	40,000	
		Bank	10,000	80,000
	2,00,000			2,00,000

9. (a) *Determination of Sales: Sales* = $\frac{₹\ 4,00,000}{25} \times 100 = ₹\ 16,00,000$

(b) *Determination of Sundry Debtors*: Debtors velocity is 3 months. In other words, debtors' collection period is 3 months, or debtors' turnover ratio is 4. Assuming all sales to be credit sales and debtors turnover ratio being calculated on the basis of year-end figures,

$$\text{Debtors Turnover Ratio} = \frac{\text{Credit Sales}}{\text{Closing Debtors} + \text{Bills Receivables}}$$

Or,

$$\text{Closing Debtors + Bills Receivable} = \frac{\text{Credit Sales}}{\text{Debtors Turnover Ratio}} = \frac{₹\ 16,00,000}{4} = ₹\ 4,00,000$$

Closing Debtors = ₹ 4,00,000 – ₹ 25,000 = ₹ 3,75,000.

(c) *Determination of Closing Stock:* Stock velocity of 8 months signifies that the inventory holding period is 8 months, stock turnover ratio is 1.5 = (12 months ÷ 8).

$$\text{Stock turnover} = \frac{\text{Cost of Goods Sold (Sales} - \text{Gross profit)}}{\text{Average Stock}}$$

$$1.5 = \frac{₹\ 12,00,000}{\text{Average Stock}}$$

$$\text{Average Stock} = \frac{₹\ 12,00,000}{1.5} = ₹\ 8,00,000$$

Closing Stock – Opening Stock = ₹ 10,000

$$\frac{\text{Closing Stock} + \text{Opening Stock}}{2} = ₹\ 8,00,000$$

Or, Closing Stock + Opening Stock = ₹ 16,00,000

2 Opening Stock = ₹ 15,90,000

Opening Stock = ₹ 7,95,000

Therefore, Closing Stock = ₹ 8,05,000

(d) *Determination of Sundry Creditors*: Creditors velocity of 2 months signifies that the credit payment period is 2 months. In other words, creditors' turnover ratio is 6 (12 months ÷2). Assuming all purchases to be credit purchases and creditors turnover is based on year-end figures,

$$\text{Creditors Turnover Ratio} = \frac{\text{Creditors Purchases}}{\text{Credits} + \text{Bills Payable}}$$

$$6 = \frac{₹\ 12,10,000}{\text{Creditors} + ₹\ 10,000}$$

$$\text{Creditors} + ₹\ 10,000 = \frac{₹\ 12,10,000}{6} = ₹\ 2,01,667$$

Creditors = ₹ 2,01,667 – ₹ 10,000 = ₹ 1,91,667

Credit Purchases are calculated as follows:

Cost of Goods Sold = Opening Stock + Purchases – Closing Stock

₹ 12,00,000 = ₹ 7,95,000 + Purchases – ₹ 8,05,000

₹ 12,00,000 + ₹ 10,000 = Purchases

₹ 12,10,000 = Purchases (credit).

10. (a) Both funds flow and cash flow statements are used in analysis of past transactions of a business firm. The difference between these two statements is given below:

Funds flow statement is based on the accrual accounting system. In case of preparation of cash flow statements all transactions effecting the cash or cash equivalents only is taken into consideration.

Funds flow statement analyses the sources and application of funds of long-term nature and the net increase or decrease in long-term funds will be reflected on the working capital of the firm. The cash flow statement will only consider the increase or decrease in current assets and current liabilities in calculating the cash flow of funds from operations.

Funds Flow analysis is more useful for long range financial planning. Cash flow analysis is more useful for identifying and correcting the current liquidity problems of the firm.

Funds flow statement tallies the funds generated from various sources with various uses to which they are put. Cash flow statement starts with the opening balance of cash and reaches to the closing balance of cash by proceeding through sources and uses.

(b) Basic Functions of Financial Management: Financial Management deals with the procurement of funds and their effective utilization in the business. The first basic function of financial management is procurement of funds and the other is their effective utilization.

(i) *Procurement of Funds:* Funds can be procured from different sources, their procurement is a complex problem for business concerns. Funds procured from different sources have different characteristics in terms of risk, cost and control. The cost of funds should be at the minimum level for that a proper balancing of risk and control factors must be carried out.

(ii) *Effective Utilisation of Funds:* The finance manager is also responsible for effective utilisation of funds. He has to point out situations where the funds are being kept idle or where proper use of funds is not being made. All the funds are procured at a certain cost and after entailing a certain amount of risk. If these funds are not utilised in the manner so that they generate an income higher than the cost of procuring them, there is no point in running the business. Hence, it is crucial to employ the funds properly and profitably.

(c) Advantages of Debt Securitisation: Debt securitisation is a method of recycling of funds and is especially beneficial to financial intermediaries to support lending volumes.

The advantages of debt securitisation to the originator are the following:

(i) The assets are shifted off the Balance Sheet, thus giving the originator recourse to off balance sheet funding.

(ii) It converts illiquid assets to liquid portfolio.

(iii) It facilitates better balance sheet management; assets are transferred off balance sheet facilitating satisfaction of capital adequacy norms.

(iv) The originator's credit rating enhances.

For the investors, securitisation opens up new investment avenues. Though the investor bears the credit risk, the securities are tied up to definite assets.