Q.1(a) Given SQ per unit = 5kg
Actual Cost = AQ × AP = 7,14,000
AO = 1000 units
SP– AP = 10
MPV = 51,000 (F)
MPV = (SP – AP) AQ
∴ 5100 = 10 AQ

$$AQ = \frac{51000}{10} = 5100 \text{ kg}$$

SP – AP = 10
SP – 140 = 10
AQ × AP = 714000
SP = 10 + 140 = 150
5100 × AP = 714000

$$AP = \frac{714000}{5100} = 140$$

SQ for AO	SP	AQ	AP
5000	**150**	**5100**	**140**

Material Usage Variance = (SQ for AO – AQ) SP
= (5000 – 5100) 150 = **15000 (A)**
Material Cost Variance = SQ for AO × SP – AQ × AP
5000 × 150 – 5100 × 140
= 750000 – 714000 = **36000 (F)**

Q.1(b)

	Year 1	Year 2
	2011	**2012**
Sales (Unit)	80,000	1,20,000
Sales (Value)	32,00,000	48,00,000
Total cost	34,40,000	45,60,000
Profit / (Loss)	(2,40,000)	2,40,000

$$\text{P/V Ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100 = \frac{2,40,000 - (-2,40,000)}{48,00,000 - 32,00,000} \times 100 = \frac{4,80,000}{16,00,000} \times 100 = 30\%$$

Fixed Cost = (Sales × P/V Ratio) – Profit
= 48,00,000 × 30% – 2,40,000 = 1,20,000
CPU = Selling Price × P/V Ratio
= 40 × 30% = 12

(i) BEP (unit) = $\frac{F}{CPU} = \frac{12,00,000}{12}$ = **1,00,000 Units**

(ii) Profit at 75% of total capacity in 2013
⇒ Sales (unit at 75 % capacity = 2,00,000 × 75% = 1,50,000 units
Profit = Sales × P/V Ratio – F.C. = 1,50,000 × 40 × 30% – 12,00,000 = **₹ 6,00,000**

Q.1(c) $$Kp = \frac{D + \frac{RV - NP}{n}}{\frac{RV + NP}{2}} \times 100$$

$$= \frac{12 + \frac{110 - 103}{10}}{\frac{110 + 103}{2}} \times 100 = 11.92\ \%$$

Q.1(d) (i) $$\frac{\text{Fixed Assets}}{\text{Proprietor's Fund}} = 0.75$$

Since there are no long term debt

$$\therefore \frac{\text{Working Capital}}{\text{Proprietor's Fund}} = 0.25$$

$$\therefore \frac{12{,}00{,}000}{\text{Proprietor's Fund}} = 0.25$$

$\therefore$ Proprietor's Fund = ₹ 48,00,000/ -

(ii) $$\frac{\text{Fixed Asset}}{\text{Proprietor's Fund}} = 0.75$$

$$\therefore \frac{F.A.}{48{,}00{,}000} = 0.75$$

$\therefore$ F.A. = ₹ 36,00,000 / -

(iii) $$ROE = \frac{\text{Net Profit}}{\text{Proprietor's Fund}} \times 100$$

$$15\% = \frac{\text{Net Profit}}{48{,}00{,}000} \times 100$$

$\therefore$ Net profit = ₹ 7,20,000

$\because$ W.C. Turnover Ratio = $\frac{\text{Sales}}{\text{W.C.}}$

$$\therefore 5 = \frac{\text{Sales}}{12{,}00{,}000}$$

$\therefore$ Sales = ₹ 60,00,000

Therefore, N.P. Ratio = $\frac{N.P.}{\text{Sales}} \times 100$

$$= \frac{7{,}20{,}000}{60{,}00{,}000} \times 100 = 12\ \%$$

Q.2(a) **Cash Flow Statement**

Particular	Amount	Amount
Cash Flow From Operating Activity		
Net profit before tax	19,22,000	
Add: Depreciation (330000 + 200000)	5,30,000	
Add: Preliminary Expenses w/o	18,000	
Add: Loss on sale of machine	70,000	
Add: Interest on debenture	30,000	
Less: Dividend Received	(50,000)	
Funds from Operations		25,20,000
Add : Increase in sundry creditor	1,30,000	
Add: Decrease in Bills Receivable	12,000	
Less: Increase in debtor	(1,90,000)	
Less: Increase in stock	(2,30,000)	(2,78,000)
Cashflow from operating activity before tax		22,42,000
Less: Tax paid		4,80,000
		17,62,000
Cash Flow From Investing Activity		
Dividend Received	50,000	
Machine sold	50,000	
Investment purchased	(5,00,000)	
P & M purchased	(13,50,000)	
		(17,50,000)
Cash Flow From Financing Activity		
Equity shares issued	11,00,000	
Debenture redeemed	(2,00,000)	
Interest paid	(30,000)	
Dividend paid	(4,80,000)	
Dividend tax paid	(82,000)	
		3,08,000
Net Cash Flow		3,20,000
Add: Opening Cash & Bank Balance		4,50,000
Closing Cash & Bank Balance		7,70,000

W.N.1. P & L Adjustment A/C

Particulars	Amount	Particulars	Amount
To general reserve	3,00,000	By balance b/d	10,30,000
To provision for tax	6,80,000	By profit & loss a/c (balancing figure	1,92,2000
To proposed dividend	6,00,000		
To corporate dividend tax	10,2000		
To balance c/d	1270000		
	2,95,2000		2,95,2000

W.N.2. Plant & Machinary A/C

Particulars	Amount	Particulars	Amount
To balance b/d	25,00,000	By Bank	50,000
To Bank	13,50,000	By loss on sale	70,000
		By depreciation	3,30,000
		By balance c/d	34,00,000
	38,50,000		38,50,000

Q.2(b) **Given**

Rate per hr. = 120
Sts. Time = 6 hr.
Actual Time = 5hr.

(i) Rowan Plan

$$\text{Payment} = \text{Actual Hr} \times \text{Rate} + \frac{\text{Time Saved}}{\text{Standard Time}} (\text{Actual hr.} \times \text{Rate per hr.})$$

$$= 5 \times 120 + \frac{1}{6} (5 \times 120)$$

$$= 600 + 100 = \textbf{₹ 700}$$

$$\text{Effective hourly Rate} = \frac{700}{5} = \textbf{₹ 140}$$

(ii) Halsey Inventive Scheme
Payment = Actual hr. × Rate per hr. + 50% (Time Save) × Rate per hr.
Let us assume time taken = X
$140 X = X \times 120 + 50\% \{(6 - X) \times 120\}$
$140 X - 120 X = 50\% (720 - 120 X)$
$20 X = 360 - 60 X$
$20 X + 60 X = 360$

$$X = \frac{360}{80} = \textbf{4.5 hr.}$$

Q.3(a)

Statement of Equivalent Production

Input		Output		Equivalent let Production					
				Material		Labour		Overhead	
Particulars	Unit		Unit	%	Unit	%	Unit	%	Unit
OP. W/P	NIL	Units Completed	42,000	100%	42,000	100 %	42,000	100%	42,000
Unit Introduces	45,000	Normal loss	900	–	–	–	–	–	–
		Abnormal loss	300	100%	300	80%	240	60%	180
		Closing W/P	1,800	100%	1,800	50%	900	40%	720
Total	45,000	Total	45,000		44,100		43,140		42,900

Statement of Cost P.U.
Total Cost

Particular		Total Cost	Equivalent Production	Cost P.U.
Material (4,50,000 + 65,500)	5,11,000			
Less: Sale of N.L.	4,500	5,11,000	44,100	11.5873
Labour		90,800	43,140	2.1048
Overhead		1,80,700	42,900	4.2121
			Total	17.9042

Statement of Valuation

Particulars		E.P.	Cost P.V.	Total Value
(I) Units completed		42,000	17.9042	7,51,976
(II) Abnormal loss			11.5873	
	M	300		3,476
	L	240	2.1048	505
	OH	180	4.2121	750
				4,740
(III) Closing W/P				
	M	1,800	11.5873	20,857
	L	900	2.1048	1,894
	OH	720	4.2121	3,033
				25,784

Process II A/c

Particulars	Unit	Rate	Amt.	Particulars	Unit	Rate	Amt.
To Unit Introduce	45,000	10	4,50,000	By Normal Loss	900	5	4,500
To Direct Material	-		65,500	By Abnormal Loss	300	1.58	4,740
To Labour	-		90,800	By Finished stock A/c	4,200	17.90	7,51,976
To Overhead	-		1,80,700	By Closing A/c	1,800	14.32	25,784
	45,000		7,87,000		45,000		7,87,000

Abnormal Loss A/c

Particulars	Unit	Rate	Amt.	Particulars	Unit	Rate	Amt.
To Process II A/c	300	15.8	4,740	By Bank	300	2	600
				By P & Loss	-	-	4,140
	300	-	4,740		300	-	4,740

Q.3(b) **XL Co. Ltd.**

Income Statement

	Amount
Sales	42,00,000
- V.C	31,26,900
Cont'n	10,73,100
- F.C.	3,48,000
EB IT	7,25,100
- Interest	2,03,500
EBT	5,21,600
- tax @ 35 %	1,82,560
EAT	3,39,040
÷ No. of ES	2,50,000
EPS	1.356

(i) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}} = \frac{10,73,100}{7,25,100} = 1.48$

(ii) Combined Leverage $= \frac{\text{Contribution}}{\text{EBT}} = \frac{10,73,100}{5,21,600} = 2.06$

(iii) EPS = 1.356

Q.4 (a)

(i) Allocation of Joint cost (Revers Cost Method)

	B_1	B_2
Sales value after Processing	72,000	90,000
	(1800 × 40)	(3000 × 30)
Less Est. Profit	14,400	27,000
Est. Selling Exp.	10,800	13,500
Cost After Sepreation	35,000	24,000
Share in J.C.	11,800	25,500

$\therefore$ Share in J.C. for M_1 = 2,12,400 – (11,800 + 25,500)
= 1,75,100

(ii) Product wise & overall Profitability

	M_1	**B_1**	**B_2**	**Total**
Sales value	4,00,000	72,000	90,000	56,200
Less: Share in J.C.	1,75,100	11,800	25,500	2,12,400
Cost after sepreation	-	35,000	24,000	59,000
Est selling Exp.	80,000	10,800	13,500	1,04,300
Profit	**1,44,900**	**14,400**	**27,000**	**1,86,300**

Q.4(b) (i) Operating Cycle Period

Particulars	In days
Raw material storage period	55
WIP Conversion period	18
F.G. Storage period	22
Debt collection period	45
Creditors payment period	(60)
Net operating cycle period	80

(ii) No. of O.C. in a year $= \frac{360}{80} = 4.5$

(iii) Working Capital Requirement

$= \frac{\text{Annual cash operating cost}}{\text{No. of O.C.}}$

$= \frac{21,00,000 - 2,10,000}{4.5}$ = ₹ 4,20,000

(iv) If credit sale is discontinued, then net operating cycle period will be:
55 + 18 + 22 – 60 = 35 days

No. of OC $= \frac{360}{35} = 10.29$

Working Cap. Req. $= \frac{18,90,000}{10.29} = 1,83,673$

Reduction in W.C. Req. = ₹ 2,36,327

Q.5(a)

Industries	Cost Unit
Steel	Per ton
Automobile	Per unit
Transport	Per tonkm or per passenger km
Power	Per kwhr or per unit

Q.5(b) **Cost Allocation**

It is defined as the process of allotment or identification or assignment of whole items of cost to cost centers or costs units. Thus the charging of overhead to a cost center or a cost unit is the process of allocation of costs.

Cost Apportionment

It is defined as the process of distributing an item of cost over several cost centers or cost units according to appropriate base. In the case of apportionment, one item of cost is chargedto two or more cost centers or cost unit.

Q.5(c) Debt Securitisation

- Debt 0Securitisation is a process in which **illiquid assets are pooled into marketable securities.**
- The process leads to the **creation of financial instruments** that represent ownership interest in, or are secured by a segregated income producing asset or pool, of assets.
- The process of securitisation is generally **without recourse** i.e. the investor bears the credit risk. It can be reduced through **credit enhancement facilities** like insurance, letters of credit and guarantees.
- The issuer is under an obligation to pay to investors only if the **cash flows are received** by him from the collateral.

Securitisation process:

Step 1	Step 2	Step 3	Step 4
SPV (Special Purpose Vechile) is created to hold title to assets underlying securities as a repository of the assets or claims being secruritised.	The originator i.e. the primary financier or the legal holder of assets sells the assets (existing or future) to the SPV.	The SPV, with the help of an investment banker, issues securities which are distributed to investors in form of pass through or pay through certificates.	The SPV pays the originator for the assets with the proceeds from the sale of securities.

Advantages :

(i) The assets are **shifted off the balance shee**t, 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** as assets are transferred off balance sheet facilitating satisfaction of capital adequacy norms.

(iv) The originator's **credit rating** enhances.

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

Q.5(d) Differentiation between Factoring and Bills Discounting

The differences between Factoring and Bills discounting are:

(a) Factoring is called as “Invoice Factoring’ whereas Bills discounting is known as ‘Invoice discounting.”

(b) In Factoring, the parties are known as the client, factor and debtor whereas in Bills discounting, they are known as drawer, drawee and payee.

(c) Factoring is a sort of management of book debts whereas bills discounting is a sort of borrowing from commercial banks.

(d) For factoring there is no specific Act, whereas in the case of bills discounting, the Negotiable Instruents Act is applicable.

Q.6(a)

Expenses Budget

Particulars	15000 units	18000 units	2000 units
(A) Variable Cost			
- Direct Material	7,50,000	9,00,000	10,00,000
- Direct Labour	3,00,000	3,60,000	4,00,000
- Variable OH	2,25,000	2,70,000	3,00,000
Direct Expenses	9,00,000	1,08,000	1,20,000
-Variable Selling Exp.	1,80,000	2,16,000	2,40,000
- Variable Distribution	1,53,000	1,83,600	2,04,000
Total Variable	**16,98,000**	**20,37,600**	**22,64,000**
(B) Fixed Cost			
- Selling Expenses	60,000	60,000	60,000
-Factory Expenses	1,40,000	1,40,000	1,40,000
-Administration	80,000	80,000	80,000
-Distribution Expenses	36,000	36,000	36,000
Total Fixed Expenses	**3,16,000**	**3,16,000**	**3,16,000**
(A + B)	**20,14,000**	**23,53,600**	**25,80,000**

Q.6(b)

Particulars	Machine I	Machine II
Cost of machine	₹ 15,00,000	₹ 2,00,000
Expected life	5 yrs.	5 yrs.
PBDT (p.a.)	₹ 6,25,000	₹ 8,75,000
Less: Depreciation	3,00,000	4,00,000
PBT	3,25,000	4,75,000
Less: tax@ 30 %	97,500	1,42,500
PAT	2,27,500	3,32,500
Add: Depreciation	3,00,000	4,00,000
CFAT	5,27,500	7,32,500

		MACHINE- I			**MACHINE- II**		
Year	PVF @ 12%	CFAT	PV	Cumulative values	CFAT	PV	Cumulative values
1.	.893	5,27,500	4,71,058	4,71,058	7,32,500	6,54,123	6,54,123
2.	.797	5,27,500	4,20,418	9,81,476	7,32,500	5,83,803	12,37,926
3.	.712	5,27,500	3,75,580	12,67,056	7,32,500	5,21,540	17,59,466
4.	.636	5,27,500	3,35,490	16,02,546	7,32,500	4,65,870	22,25,336
5.	.567	5,27,500	2,99,092	19,01,638	7,32,500	4,15,327	26,40,663

(i) Discounted Pay Back Period

Machine - I

$$\text{Discounted PBP} = 3 + \frac{2,32,944}{3,35,490} = 3.69 \text{ years}$$

Machine - II

$$\text{Discounted PBP} = 3 + \frac{2,40,534}{4,65,870} = 3.52 \text{ years}$$

(ii) Net Present Value

Machine - I

19,01,638 – 15,00,000 = ₹ 4,01,638

Machine - II

26,40,663 – 20,00,000 = ₹ 6,40,663

(iii) Profilability Index

Machine - I

$$PI = \frac{PVIF}{PVOF} \frac{19,01,638}{15,00,000} = 1.27$$

Machine - II

$$PI = \frac{26,40,663}{20,00,000} = 1.32$$

Q.7(a) Perpetual inventory system is the recording of material receipts, issues and balances of individual items of stock in either quantity or quantity and value. In this method, stock records are maintained in such a way as to make an entry in the records, the physical movement of stock, on receipts and issues of materials and to indicate the balance of each item of material in the stores at any point of time. In this system, the entries are made in bin cards and stores ledger as and when the receipts and issues of materials take place and ascertaining the balance after every receipt or issue of materials. The stocks as per bin card and stores ledger are reconciled on a continuous basis.
However, in Continuous stock taking is the process of counting and valuing selected items at different times on a rotating basis. Under this system, physical stock verification is made for each item of stock on continuous basis. It is a physical checking of the stock records with actual stocks on continuous basis. It is a verification conducted round the year, thus covering each item of store twice or thrice.

Thus we can say that efficacy of the perpetual system depends on continuous stock taking.If continuous stock verification is not used fraud and errors cannot be detected and objects of perpetual system are not fulfilled.

Q. 7(b) Integrated accounting system refers to the unity of the financial and cost accounting systems to ensure all relevant expenditure is absorbed into the cost accounts. Under this accounting system transactions are classified both according to their function and nature.
Under integrated accounting system, both Financial and Cost Accounting records are maintained in one set of books to meet the requirements of Financial Accounting and Cost Accounting purposes.
In this system only one set of accounts are maintained and there will be single profit figure. The necessity of preparation of reconciliation statement does not arise.

Q.7(c) Operating Risk and Financial Risk

Operating risk refers to the risk associated with the firm's operations. It is an unavoidable risk because of the environment in which the firm has to operate and the operating risk is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses. Revenues and expenses are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost.
Whereas, Financial risk refers to the additional risk placed on firm's shareholders as a result of debt use in financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity. Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc.

Q.7(d) Venture Capital Financing

The venture capital financing refers to financing of new high risky venture promoted by qualified entrepreneurs who lack experience and funds to give shape to their ideas. In broad sense, under venture capital financing venture capitalist make investment to purchase equity or debt securities from inexperienced entrepreneurs who undertake highly risky ventures with a potential of success.
Some of the characteristics of Venture Capital Funding are:-
.. It is basically a equity finance in new companies.
.. It can be viewed as along term investment in growth-oriented small/medium firms.
.. Apart from providing funds, the investor also provides support in form of sales strategy, business networking and management expertise, enabling the growth of the entrepreneur.

Factors that a venture capitalist should consider before financing any risky project are as follows:

(i) Level of expertise of company's management: Most of venture capitalist believes that the success of a new project is highly dependent on the quality of its management team. They expect that entrepreneur should have a skilled team of managers. Managements also be required to show a high level of commitments to the project.

(ii) Level of expertise in production: Venture capital should ensure that entrepreneur and his team should have necessary technical ability to be able to develop and produce new product / service.

(iii) Nature of new product / service: The venture capitalist should consider whether the development and production of new product / service should be technically feasible. They should employ experts in their respective fields to examine idea proposed by the entrepreneur.

(iv) Future Prospects: Since the degree of risk involved in investing in the company is quite fairly high, venture capitalists should seek to ensure that the prospects for future profits compensate for the risk. Therefore, they should see a detailed business plan setting out the future business strategy.

(v) Competition: The venture capitalist should seek assurance that there is actually a market for a new product. Further venture capitalists should see the research carried on by the entrepreneur.

(vi) Risk borne by entrepreneur: The venture capitalist is expected to see that the entrepreneur bears a high degree of risk. This will assure them that the entrepreneur have the sufficient level of the commitments to project as they themselves will have a lot of loss, should the project fail.

(vii) Exit Route: The venture capitalist should try to establish a number of exist routes. These may include a sale of shares to the public, sale of shares to another business, or sale of shares to original owners.

(viii) Board membership: In case of companies, to ensure proper protection of their investment, venture capitalist should require a place on the Board of Directors. This will enable them to have their say on all significant matters affecting the business.

Q.7(e) Electronic Cash Management System

Most of the cash management systems now-a-days are electronically based, since 'speed' is the essence of any cash management system. Electronically, transfer of data as well as funds play a key role in any cash management system. Various elements in the process of cash management are linked through a satellite. Various places that are interlinked may be the place where the instrument is collected, the place where cash is to be transferred in company's account, the place where the payment is to be transferred etc.

Certain networked cash management system may also provide a very limited access to third parties like parties having very regular dealings of receipts and payments with the company etc. A finance company accepting deposits from public through sub-brokers may give a limited access to sub-brokers to verify the collections made through him for determination of his commission among other things.

Electronic-scientific cash management results in:

- Significant saving in time.
- Decrease in interest costs.
- Less paper work.
- Greater accounting accuracy.
- More control over time and funds.
- Supports electronic payments.
- Faster transfer of funds from one location to another, where required.
- Speedy conversion of various instruments into cash.
- Making available funds wherever required, whenever required.
- Reduction in the amount of 'idle float' to the maximum possible extent.
- Ensures no idle funds are placed at any place in the organization.
- It makes inter-bank balancing of funds much easier.
- It is a true form of centralised 'Cash Management'.
- Produces faster electronic reconciliation.
- Allows for detection of book-keeping errors.
- Reduces the number of cheques issued.
- Earns interest income or reduce interest expense.