Qn. 1 (i) What is Cost accounting ? Enumerate its important objectives. **[2 marks]**

Ans. 1 (i) Cost Accounting :- **CIMA defines cost accounting as** "the process of accounting for cost from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost centres and cost units. In its widest usage, it embraces the preparation of statistical data, the application of cost control methods and the ascertainment of the profitability of activities carried out or planned."

Shilling Law has defined cost accounting as "the body of concepts, methods and procedures used to measure, analyse, or estimate costs, profitability and the performance of individual products, department's and other segments of a company's operations, for either internal or external use or both, and to report on these questions to the interested parties.

∴ **Cost Accounting = Costing + Application of cost control methods + Ascertainment of Profitability.**

IMPORTANT OBJECTIVES OF COST ACCOUNTING :

a. **To ascertain and analyse costs**: The primary objective of cost accounting is to ascertain and analyse costs incurred on the production of various products, jobs and services etc.
b. **To control costs**: There are a number of techniques in cost accounting like standard costing and budgetary control for controlling cost.
c. **To reduce costs:** By now, the objective of cost accounting has been extended to reduce costs. For cost reduction plan, products, processes, procedures, organisation, and methods are continuously reviewed or scrutinized in order to improve efficiency and to reduce cost.
d. **To fix the selling price**: Under cost accounting, reliable data is provided to act as a base for fixing selling prices.
e. **To prepare periodic statements:** In cost accounting system, periodic cost statements (viz. monthly, quarterly) for review of operating results are prepared.
f. **To provide information:** Cost accounting provides useful information for planning and control and for taking various decisions regarding increase in production, installation or replacement of a machine, making or buying of a component, continuing or closing down of a business etc.

Qn. 1 (ii) Distinguish between Fixed overheads and Variable overheads. **[2 marks]**

Ans. 1 (ii)

(a) **Fixed Overhead** :- These are the exps which remains constant at all the level's of activity. This statement is true only in case of short term. In long term they are also variable eg. Rent of building, Managerial Remuneration's. Fixed overheads are generally indirect to the units produced but may be direct to any department or plan.

(b) **Variable Overheads** :- These are often called as marginal cost. It is called variable because it varies with variation in the level of production. It always changes in totality and remains constant per unit. Example : Material Cost, Labour Cost etc.

Qn. 1 (iii) Re-order quantity of material 'X' is 5,000 kg.; Maximum level 8,000 kg.; Minimum usage 50 kg. per hour; minimum re-order period 4 days; daily working hours in the factory is 8 hours. You are required to calculate the re-order level of material 'X'. **[2 marks]**

Ans. (iii)

Minimum usage = 50 kg per hour
Working hours = 8 hours
∴ Minimum usage per day = 50kg / hr. x 8 hours = 400 kg.

Maximum level = 8,000 kg.
Re – order quantity = 5,000 kg.

$$\text{Maximum level of inventory} = \text{Re – order level} + \text{Re – order quantity} - \left(\begin{array}{c}\text{minimum}\\ \text{consumption}\end{array} \times \begin{array}{c}\text{minimum}\\ \text{re-order period}\end{array}\right)$$

$$\Rightarrow \text{Re-order level} = \text{Maximum level of inventory} - \text{Re-order quantity} + \left(\begin{array}{c}\text{minimum}\\ \text{consumption}\end{array} \times \begin{array}{c}\text{minimum}\\ \text{re-order period}\end{array}\right)$$

= 8000 kg – 5000 kg + (400 kg x 4)
= 8000 kg – 5000 kg + 1600 kg
= 4600 kg

∴ Re – order level = 4,600 kg.

Qn. 1 (iv) What do you understand by Key factor? Give two examples of it. **[2 marks]**

Ans. 1 (iv) Key factor – The CIMA defines a Key Factor as "the factor which, at a particular time, or over a period, will limit the activities of an undertaking. Management has to prepare a plan after taking into consideration the constraints, if any, about the utilization of various resources so that the profit can be maximized. These constraints are known as limiting factor or key factor.

Example 1 : If raw material is the key factor and its availability is limited to particular quantity and the company is manufacturing three products A, B & C in such cases contribution per unit of kg is calculated to decide which product is manufactured first.

Example 2 : If machine hours is the key factor. Than we should calculate contribution per machine hour to maximize our profit.

Qn. 1 (v) What are the main advantages of Integrated accounts ? **[2 marks]**

Ans. 1 (v) The following are the main advantages of the integrated accounting system:

1. Since there is one set of accounts, thus there is one figure of profit. Hence, the question of reconciliation of costing profit and financial profit does not arise.
2. Efforts in duplicate recording of entries & to maintain separate sets of books are saved. Thus, there is saving of time and labour.
3. The operation of the system is facilitated with the use of mechanised accounting.
4. Costing data are available from books of original entry and hence, no delay is caused in obtaining information.
5. Combination of two sets of books and centralisation of accounting function results in economy.
6. Complete analysis of cost and sales is kept.
7. Complete details of all receipts and payments in cash are kept.
8. Complete details of all assets and liabilities are kept and this system does not use notional account to represent impersonal accounts.
9. Since financial books are subject to a rigorous accuracy, checking integrated accounts ensures similar checks for cost account.

Qn. 2. SB Constructions Limited has entered into a big contract at an agreed price of Rs.1,50,00,000 subject to an escalation clause for material and labour as spent out on the contract and corresponding actuals are as follows :

	Standard		Actual	
Material	Quantity (tones)	Rate per tonne Rs.	Quantity (tones)	Rate per tonne Rs.
A	3,000	1,000	3,400	1,100
B	2,400	800	2,300	700
C	500	4,000	600	3,900
D	100	30,000	90	31,500

Labour	Hours	Hourly Rate Rs.	Hours	Hourly Rate Rs.
L_1	60,000	15	56,000	18
L_2	40,000	30	38,000	35

You are required to :

(i) Give your analysis of admissible escalation claim and determine the final contract price payable. **[4 marks]**

(ii) Prepare the contract account, if the all expenses other than material and labour related to the contract are Rs. 13,45,000. **[3 marks]**

(iii) Calculate the following variances and verify them : **[8 mark]**

(a) Material cost variance
(b) Material price variance
(c) Material usage variance
(d) Labour cost variance
(e) Labour rate variance
(f) Labour efficiency variance.

Ans. 2 (i)

Escalation Clause

Statement showing claim regarding Material

Material	Standard Quantity(tones)	Standard rate (Rs.)	Actual rate (Rs.)	Variation in rate (Rs.)	Escalation claim (Rs.)
A	3000	1000	1100	+100	+ 300000
B	2400	800	700	- 100	- 240000
C	500	4000	3900	-100	- 50000
D	100	30000	31500	+1500	+ 150000
			Material escalation claim =		160000

Statement showing claim regarding Labour

Labour	**Standard Hours**	**Hourly Rate** (Rs.) **Standard**	**Actual**	**Variation in rate** (Rs.)	**Escalation claim (Rs.)**
L1	60000	15	18	+3	180000
L2	40000	30	35	+5	200000
			Labour escalation claim =		380000

Final claim = Materials escalation claim + Labour escalation claim
= 160000 + 380000
= 540000.

Statement showing final price payable		**Rs.**
Agreed price		1,50,00,000
Agreed calculation:-		
Material cost	1,60,000	
Labour cost	3,80,000	5,40,000
Final price variation		1,55,40,000

Ans. 2 (ii)

Contract Account

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
To Material		By, WIP Account (Contract Price)	1,50,00,000
A	37,40,000	" WIP Account (Escalation Clause)	5,40,000
B	16,10,000		
C	23,40,000		
D	28,35,000		
" Labour			
L1	10,08,000		
L2	13,30,000		
" Other Expenses	13,45,000		
" Profit & Loss Account (bal. figure)	36,72,000		
	1,55,40,000		**1,55,40,000**

Ans. 2 (iii)

(a) Material cost variance = SP x SQ – AP x AQ = 9920000 – 10525000 = 605000 (A)
(b) Material price variance = AQ(SP – AP) = 10340000 – 10525000 = 185000 (A)
(c) Material usage variance = SP(SQ - SM) + SP (SM – AQ)
= (9920000 – 10564800) + (10564800 – 10340000)
= - 644800 + 224800 = 420000 (A)
(d) Labour cost variance = SR x ST – AR x ATP = 2100000 – 2338000 = 238000(A)
(e) Labour rate variance = ATP x (SR – AR) = 1980000 – 2338000 = 358000 (A)
(f) Labour efficiency variance = SR(ST x SM) = 2100000 – 1974000 = 126000 (F)

Working notes:-

	SP X SQ	SP X SM	SP X AQ	AP X AQ
A =	1000 x 3000 = 3000000	1000 x 3195 = 3195000	1000 x 3400 = 3400000	1100 x 3400 = 3740000
B =	800 x 2400	800 x 2556	800 x 2300	700 x 2300

	= 1920000	= 2044800	= 1840000	= 1610000
C =	4000 x 500 = 2000000	4000 x 532.5 = 2130000	4000 x 600 = 2400000	3900 x 600 = 2340000
D =	30000 x 100 = 3000000	30000 x 106.5 = 3195000	30000 x 90 = 2700000	31500 x 90 = 2835000
	9920000	10564800	10340000	10525000

SM = Standard Mix i.e. Total Actual Quantity used in standard mix ratio.
Total Actual quantity used = 3400 + 2300 + 600 + 90 = 6390 tonnes
Standard Mix ratio : 3000 : 2400 : 500 : 100
SM of A = 6390 x 30/60 = 3195
SM of B = 6390 x 24/60 = 2556
SM of C= 6390 x 5/60 = 532.5
SM of D = 6390 x 1/60 = 106.5

Here SP = Standard Price of Material per tonne
SQ = Standard Quantity for Actual Output
SM = Standard Mix i.e. Total Actual Quantity used in standard mix ratio.
AQ = Actual Quantity used
AP = Actual Price of Material per tonne.

	SR x ST	SR x SM	SR x ATw	SR x ATp	AR x ATp
L1	15 x 60000 = 900000	15 x 56400 = 846000	15 x 56000 = 840000	15 x 56000 = 840000	18 x 56000 = 1008000
L2	30 x 40000 = 1200000	30 x 37600 = 1128000	30 x 38000 = 1140000	30 x 38000 = 1140000	35 x 38000 = 1330000
	2100000	1974000	1980000	1980000	2338000

SM = Standard Mix i.e. Total Actual Hours worked in standard mix ratio.
Total Actual hours worked = 56000 + 38000 = 94000
Standard Mix ratio : 6:4
SM of L_1 = 94000 + 6/10 = 56400
SM of L_2 = 94000 + 4/10 = 37600

Here SR = Standard Rate of Labour per hour
ST = Standard Hours for Actual Output
SM = Standard Mix i.e. Total Actual Hours worked in standard mix ratio.
ATw = Actual hours worked
ATp = Actual hours paid for.

Qn. 3 (a) Pharma Limited produces product 'Glucodin' which passes through two processes before it is completed and transferred to finished stock. The following data relates to March, 2010 :

	Process – I Rs.	Process – II Rs.	Finished Stock Rs.
Opening Stock	1,50,000	1,80,000	4,50,000
Direct materials	3,00,000	3,15,000	--
Direct wages	2,24,000	2,25,000	--
Factory overheads	2,10,000	90,000	--
Closing Stock	74,000	90,000	2,25,000
Inter process profit included in opening stock	NIL	30,000	1,65,000

Output of process I is transferred to process II at 25 percent profit on the transferred price, whereas output of process II is transferred to finished stock at 20 percent on transfer price. Stock in processes are valued at prime cost. Finished stock is valued at the price at which it is received from process II. Sales for the month is Rs. 28,00,000.

You are required to prepare Process-I a/c, Process-II a/c, and Finished Stock a/c showing the profit element at each stage.

Ans. 3 (a)

Process I A/c

Particulars	Total (Rs.)	Cost (Rs.)	Profit (Rs.)	Particulars	Total (Rs.)	Cost (Rs.)	Profit (Rs.)
To Opening Stock	150000	150000	--	Transfer to Process II	1080000	810000	270000
" Direct Material	300000	300000	--				
" Direct Wages	224000	224000	--				
	674000	674000	--				
Less : Closing Stock	74000	74000	--				
Prime Cost	600000	600000	--				
Overheads	210000	210000	--				
Process Cost	810000	810000	--				
Profit 33 $^{1}/_{3}$ of cost (W.N. 1)	270000	--	270000				
	1080000	810000	270000		------------	----------	-----------
					1080000	810000	270000

Process II A/c

Particulars	Total	Cost	Profit	Particulars	Total	Cost	Profit
To Opening Stock	180000	150000	30000	Finished Stock A/c	900000	693750	206250
" Direct Material	315000	315000	--				
" Direct Wages	225000	225000	--				
	720000	690000	30000				
Less : Closing Stock (WN 3)	90000	86250	3750				
Prime Cost	630000	603750	26250				
Overheads	90000	90000	--				
Process Cost	720000	693750	26250				
Profit 25% of cost (W.N. 2)	180000	---------	180000		-----------	----------	----------
	900000	693750	206250		900000	693750	206250

Finished Stock A/c

Particulars	Total	Cost	Profit	Particulars	Total	Cost	Profit
Opening Stock	450000	285000	165000	Sales	2800000	815625	1984375
Transferred from Process II	900000	693750	206250				
	1350000	978750	371250				
Less : Closing Stock (WN 4)	225000	163125	61875				
	1125000	815625	309375				
Profit	1675000	--	1675000		------------	-----------	-----------
	2800000	815625	1984375		2000000	815625	1984375

W.N. 1

(1) Let transfer price be 100 then C.P = 75

$$\% \text{ of Pft. on C. P} = \frac{25}{75} \times 100 = 33.33\ \%$$

(2) Let transfer price be Rs.100 then C.P. = 80

$$\% \text{ Pft. on C. P} = \frac{20}{80} \times 100 = 25\ \%$$

(3) Calculation of cost of Closing Stock of Process II = Value of Closing Stock x $\frac{\text{Cost}}{\text{Total}}$ = 90000 x $\frac{690000}{720000}$ = 86250

(4) Calculation of cost of Closing Stock of Finished Stock Account = Value of Closing Stock x $\frac{\text{Cost}}{\text{Total}}$ = 225000 x $\frac{978750}{1350000}$ = 163125

Qn. 3 (b) A transport company has been given a 40 kilometre long route to run 5 buses. The cost of each bus is Rs. 6,50,000. The buses will make 3 round trips per day carrying on an average 80 percent passengers of their seating capacity. The seating capacity of each bus is 40 passengers. The buses will run on an average 25 days in a month. The other information for the year 2010-11 are given below : **[8 Marks]**

Garage rent	Rs. 4,000 per month
Annual repairs and maintenance	Rs. 22,500 each bus
Salaries of 5 drivers	Rs. 3,000 each per month
Wages of 5 conductors	Rs. 1,200 each per month
Manager's salary	Rs. 7,500 per month
Road tax, permit fee, etc.	Rs. 5,000 for a quarter
Office expenses	Rs. 2,000 per month
Cost of diesel per litre	Rs. 33
Kilometre run per litre for each bus	6 kilometres
Annual depreciation	15% of cost
Annual Insurance	3% of cost

You are required to calculate the bus fare to be charged from each passenger per kilometre, if the company wants to earn a profits of $33\,^1/_3$ percent on taking (total receipts from passengers).

Ans. 3 (b) Computation of Bus Fare to be charged from per Passenger per km

Particulars	**Rs.**
Garage rent per month	4000
Repairs & maintenance per month $\frac{22{,}500 \times 5}{12}$	9375
Salaries of 5 drivers (3000 x 5) per month	15000
Wages of 5 conductors (1200 x 5) per month	6000
Managers salary per month	7500
Road tax, permit fee etc per month $5000 \times 4 \times \frac{1}{12 \text{ months}}$	1667
Office Expenses per month	2000
Cost of diesel per month $\left(\frac{30{,}000 \text{ WN 1}}{6} \times 33\right)$	165000
Depreciation per month 6,50,000 x 5 x 15% = 487500 / 12	40625
Insurance per month (650000 x 5 x 3% x 1/12)	8125
Total Cost per month	259292
Profit $259292 \times \frac{33.33}{66.67} =$	129646
Total Takings	Rs. 388938
Passenger kms **(WN 2)**	960000
Taking per passenger per km	Rs. 0.405

WN 1 : Calculation of total traveling of 5 buses per month :

No. of round trips daily = 3
Distance one way = 40 kms
No. of days run in a month = 25 days
No. of buses = 5
Total Traveling per month = 3 x 2 x 40 x 25 x 5 = 30,000 kms.

WN 2 : Calculation of passenger kms per month :

No. of kms traveled per month = 30000
Capacity occupied = 40 passengers x 80% = 32
No. of passenger kms = 30000 x 32 = 9,60,000

Qn 4. Answer of the following :

(i) Following informations are available for the year 2008 and 2009 of PIX 3 Limited : **[3 marks]**

Year	2008	2009
Sales	Rs. 32,00,000	Rs. 57,00,000
Profit / (Loss)	(Rs. 3,00,000)	Rs. 7,00,000

Calculate – (a) P/V ratio, (b) Total fixed cost, and (c) Sales required to earn a Profit of Rs. 12,00,000.

(ii) Explain the treatment of over and under absorption of Overheads in Cost accounting. **[3 marks]**

(iii) Which is better plan out of Halsey 50 percent bonus scheme and Rowan bonus scheme for an efficient worker ? In which situation the worker get same bonus in both schemes ? **[3 marks]**

Ans. 4. (i) a) P/V Ratio = $\frac{\text{change in profit}}{\text{Change in sales}} \times 100 = \frac{1000000}{2500000} \times 100 = 40\%$

Working note:-
Change in profit = profit for 2009 – profit for 2008
= 700000 – (300000)
= 700000 + 300000 = 1000000
Change in sales = Sales for 2009 – sales for 2008
= 5700000 – 3200000
= 2500000.

b) Sales = 5700000
P/V Ratio = 40%
Contribution = sales x p/v ratio = 5700000 x 40% = 2280000
Fixed cost = contribution – profit
= 2280000 – 700000
= 1580000.

c) Desired Sales = $\frac{\text{fixed cost + desired profit}}{\text{p/v ratio}}$

$= \frac{700000 + 1200000}{40\%}$

= 4750000.

Ans. 4 (ii) There are varieties of methods used for over or under absorption of overheads in accounts. However, in the corporate sector 3 important methods are widely used for accounting of over and under absorption of Production overheads.

(a) Use of supplementary OH absorption rates.
(b) Write off to costing profit and loss A/c.
(c) Carry over to the next period accounts.

1. **Use of supplementary OH absorption rates:** This method is used when it is caused due to normal or avoidable reasons. When the amount of over and under absorbed Production overheads is significant (i.e. more than 10% of total OH incurred), supplementary absorption rates are computed by way of addition or deduction. This rate may be called negative supplementary rate if over absorbed amount is to be deducted. On the other

hand, the supplementary rate may be called positive supplementary rate if under absorbed amount is to be added, therefore,

$$\text{Negative Supplementary Rate} = \frac{\text{Over Absorbed Production overheads}}{\text{Actual value of the Base output}}$$

$$\text{Positive Supplementary Rate} = \frac{\text{Under absorbed Production overheads}}{\text{Actual value of Base output}}$$

This method is preferred when:

(i) There is a serious estimational error,
(ii) There is a substantial change in the level of activities,
(iii) There is a major change in the production method,
(iv) A case of contract on cost plus basis is there.

2. **Writing off to Costing Profit and Loss A/c.**: When the amount of over and under absorbed Production overheads is not so significant, it may be written off to costing P/L, but, if it is significant (sizeable) and it arises due to:
   (i) some uncontrollable and abnormal factors,
   (ii) contingent estimation of output.

   Then such over or under absorbed Production overheads may be written off to costing P/L, but, it suffers from some limitations like it cannot be adjusted in the value of WIP, unsold stock or sold unit (it means pricing policy cannot be adjusted).

3. **Carry-forward to next Periods Accounts:**
   This method is used when:
   (i) Balance amount is comparatively small.
   (ii) In case of new product whose output is low in initial years due to lack of demand.
   (iii) Normal business cycle is of more than one accounting period.

   Over under absorbed O H is carried over to next period in the hope that the same will automatically be adjusted or absorbed. But under this method, comparability of the performance is not properly feasible.

Ans. 4 (iii) As per Halsey 50% bonus shares

Bonus = 50% x time saved x time rate

And as per Rowan plan

$$\text{Bonus} = \frac{\text{time saved}}{\text{time allowed}} \times \text{time taken} \times \text{hourly rate}$$

Solution (a) : Hence an efficient worker can maximize his earnings by saving maximum of his time under Rowan plan but it is restricted to 50% of saving in time. Therefore if the worker can save more than 50% of Time Allowed, then Halsey 50% bonus shares are beneficial to him as compared with Rowan plan.

Solution (b) : When due time taken by the employee is 50% of time allowed the bonus will be same for both the plans. This can be proved as follows :

Bonus as per Halsey 50% = Bonus as per Rowan plan

$$50\% \times \text{Time Saved} \times \text{Time Wages Rate} = \frac{\text{Time saved}}{\text{Time Allowed}} \times \text{Time Taken} \times \text{Time Wages Rate}$$

$$50\% \times \cancel{\text{Time Saved}} \times \cancel{\text{Time Wages}}\text{ Rate} = \frac{\cancel{\text{Time saved}}}{\text{Time Allowed}} \times \text{Time Taken} \times \cancel{\text{Time Wages}}\text{ Rate}$$

Therefore when, Time Taken = 50% of Time Allowed, then bonus under both the plans will be same.

Qn. 5. Answer of the following : **[5 x 2 = 10]**

(i) What do you understand by Capital structure ? How does it differ from Financial structure ?
(ii) Explain briefly the accounts receivable systems.
(iii) Briefly discuss the concept of seed capital assistance.
(iv) Enumerate the various forms of bank credit in financing working capital of a business organisation.
(v) Ascertain the compound value and compound interest of an amount of Rs. 75,000 at 8 percent compounded semiannually for 5 years.

Ans. 5 (i) Capital structure : The permanent long-term financing of a company, including Long-term debt, Equity share Capital, Preference Share Capital & Retained earnings is called Capital Structure. It is mixture of of different long term finances used by the firm. It is the financing plan of the company. It differs from financial structure, which includes short-term debt and accounts payable also.

Financial structure : Makeup of the right-hand side of a company's Balance Sheet which includes all the ways its assets are financed, such as trade accounts payable and short-term borrowings as well as long-term debt and ownership equity. Financial structure is distinguished from Capital Structure which includes only long-term debt and equity. A company's financial structure is influenced by a number of factors, including the growth rate and stability of its sales, its competitive situation (i.e., the stability of its profits), its asset structure, and the attitudes of its management and its lenders. It is the basic frame of reference for analyses concerned with financial leveraging decisions.

Ans. 5 (ii) The receivable represents a claim of the firm against its customer which is expected to be realised in near future. Accounts Receivable System refers to maintain the volume of sundry debtors in such a way
to minimise the loss due to

- increase in interest on *blocked capital*
- Increase in *bad debts*, &
- increase in *cost of collection* **and**

to maximise the profit due to increase in *sales*".
Thus Accounts Receivable System involves both laying down credit policies and execution of such policies.

Ans. 5 (iii) Seed Capital Assistance:

1. The seed capital assistance has been designed by IDBI for professionally or technically qualified entrepreneurs. All the projects eligible for financial assistance from IDBI, directly or indirectly through refinance are eligible under the scheme.
2. The project cost should not exceed Rs. 2 crores and the maximum assistance under the project will be restricted to 50% of the required promoters contribution or Rs 15 lacs whichever is lower.
3. The seed capital Assistance is interest free but carries a security charge of one percent per annum for the first five years and an increasing rate thereafter.
4. The repayment schedule is fixed depending upon the repaying capacity of the unit with an initial moratorium of upto 5 years.

Ans. 5 (iv) There are three types of bank credit availablein financing working capital. They are called maximum permissible bank finance :

Proposal I = 75% of (CA – CL)
Proposal II = 75% of C.A – CL
Proposal III = 75% of (CA – CCA) – CL

Where CA = Current Assets
CL = Current liabilities
CCA = Core Current Assets

Ans. 5 (v) A = Compound Value ; P = Principal = 75000; n = 5 years ; r = 8% p.a. ;

$$A = P\left(1 + \frac{r}{2}\right)^{2n}$$

$$= 75{,}000\left(1 + \frac{0.08}{2}\right)^{2(5)}$$

$$= \text{Rs. } 111018.32$$

Compound Interest = A – P = 111018.32 – 75000 = 36018.32

Qn 6. The following figures and ratios are related to a company :

(i)	Sales for the year (all credit)	Rs. 30,00,000
(ii)	Gross Profit ratio	25 percent
(iii)	Fixed assets turnover (basis on cost of goods sold)	1.5

(iv)	Stock turnover (basis on cost of goods sold)	6
(v)	Liquid ratio	1 : 1
(vi)	Current ratio	1.5 : 1
(vii)	Debtors collection period	2 months
(viii)	Reserve and surplus to Share capital	0.6 : 1
(ix)	Capital gearing ratio	0.5
(x)	Fixed assets to net worth	1.20 : 1

You are required to prepare :

(a) Balance Sheet of the company on the basis of above details. **[11 marks]**

(b) The statement showing Working capital requirement, if the company wants to make a provision for contingencies @ 10 percent of net working capital including such provision. **[4 marks]**

Ans. 6 (a)

$$\text{G. P. Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$25 = \frac{\text{Gross profit}}{30,00,000} \times 100$$

$$\therefore \text{ Gross Profit} = \text{Rs. } 7,50,000$$

$$\begin{aligned}\text{Cost of goods sold} &= \text{Sales} - \text{Gross Profit} \\ &= \text{Rs.}30,00,000 - \text{Rs. } 7,50,000 \\ &= \text{Rs. } 22,50,000\end{aligned}$$

$$\text{Fixed assets T/o ratio} = \frac{\text{Cost of goods sold}}{\text{Fixed Assets}}$$

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

$$\text{Fixed Assets} = \text{Rs. } 15,00,000$$

$$\text{Stock Turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Avg. Stock}}$$

$$6 = \frac{\text{Rs. } 22,50,000}{\text{Avg. Stock}}$$

$$\text{Avg. Stock} = \text{Rs. } 3,75,000$$

$$\text{Debtors collection period} = \frac{\text{Avg. Debtors}}{\text{Credit Sales}} \times 12$$

$$2 \text{ months} = \frac{\text{Avg. Debtors}}{30,00,000} \times 12$$

$$\text{Avg. Debtors} = 30,00,000 \times \frac{2}{12} = 5,00,000$$

$$\text{Fixed Assets to net worth} = \frac{\text{Fixed Assets}}{\text{Net worth}}$$

$$1.20 = \frac{15,00,000}{\text{Net worth}}$$

Net worth = Rs. 12,50,000

$$\frac{\text{Res. \& Surplus}}{\text{Share Capital}} = 0.6$$

Res. & surplus = 0.6 Share Capital (i)

Net worth = Res. & Surplus + Share Capital

12,50,000 = 0.6 Sh. Capital + Share Capital

$$\Rightarrow \text{Sh. Capital} = \frac{12,50,000}{1.6}$$

$$= 7,81,250$$

$\therefore$ Reserve & Surplus = Sh. Capital x 0.6
= 7,81,250 x 0.6 = 4,68,750

$$\text{Capital gearing ratio} = \frac{\text{Fixed charge bearing capital}}{\text{Net Worth}}$$

$$0.5 = \frac{\text{Fixed charge bearing capital}}{12,50,000}$$

=> Fixed Charge bearing capital = 6,25,000

Let the current liability be x

$$\text{Current Ratio} = \frac{\text{Current assets}}{\text{Current liability}}$$

$$1.5 = \frac{\text{C.A.}}{x}$$

C.A. = 1.5 x ------------- (i)

$$\text{Now Liquid ratio} = \frac{\text{Liquid Assets}}{\text{Liquid liability}}$$

$$1 = \frac{\text{Liquid Assets}}{\text{Liquid liabilities}}$$

$$1 = \frac{\text{Liquid Assets}}{\text{Current liabilities – Bank O/D}}$$

$$1 = \frac{\text{Liquid Assets}}{\text{Current liabilities}} \quad \text{[Assuming Bank O/D to be Nil]}$$

$$1 = \frac{\text{Liquid Assets}}{x}$$

=> Liquid Assets = x ------------ (ii)

Now,

Current Assets – Liquid Assets = Stock

1.5 x - x = 3,75,000

=> 0.5 x = 3,75,000

$$=> \quad x = \frac{3,75,000}{0.5} = 7,50,000$$

∴ Current Liabilities = 7,50,000

∴ Current Assets = 1.5 x 7,50,000
= 11,25,000

∴ Cash = Current Assets – Stock – Debtor – 11,25,000 – 3,75,000 – 5,00,000
= 2,50,000

Balance Sheet

Equity Share Capital	7,81,250	Fixed Assets	15,00,000
Reserve & Surplus	4,68,750	Stock	3,75,000
Long term loan	6,25,000	Debtors	5,00,000
Creditors	7,50,000	Cash	2,50,000
	2625000		2625000

Ans. 6 (b) Computation of Net working capital

Current Assets	11,25,000
Less : Current Liabilities	7,50,000
Net working capital before provision	3,75,000

Net Working Capital	3,75,000
Add : Provision for contingency	
(375000 x 10/90)	41,667
Net working capital after provision	4,16,667

Qn. 7 (a) The management of P Limited is considering to select a machine out of the two mutually exclusive machines. The company's cost of capital is 12 percent and corporate tax rate for the company is 30 percent. Details of the machines are as follows : **[9 marks]**

	Machine – I	Machine - II
Cost of machine	Rs. 10,00,000	Rs. 15,00,000
Expected life	5 years	6 years
Annual income before tax and depreciation	Rs. 3,45,000	Rs. 4,55,000

Depreciation is to be charged on straight line basis. You are required to :

Your are required to :

(i) Calculate the discounted pay-back period, net present value and internal rate of return for each machine.

(ii) Advise the management of P Limited as to which machine they should take up.

The present value factors of Re. 1 are as follows :

Year	1	2	3	4	5	6
At 12%	.893	.797	.712	.636	.567	.507
At 13%	.885	.783	.693	.613	.543	.480
At 14%	.877	.769	.675	.592	.519	.456
At 15%	.870	.756	.658	.572	.497	.432
At 16%	.862	.743	.641	.552	.476	.410

(b) The following details are forecasted by a company for the purpose of effective utilisation and management of cash : **[7 marks]**

(i) Estimated sales and manufacturing costs :

Year and month 2010	Sales Rs.	Materials Rs.	Wages Rs.	Overheads Rs.
April	4,20,000	2,00,000	1,60,000	45,000
May	4,50,000	2,10,000	1,60,000	40,000
June	5,00,000	2,60,000	1,60,000	38,000
July	4,90,000	2,82,000	1,65,000	37,500
August	5,40,000	2,80,000	1,65,000	60,800
September	6,10,000	3,10,000	1,70,000	52,000

(ii) Credit terms :

— Sales — 20 percent sales are on cash, 50 percent of the credit sales are collected next month and the balance in the following month.

— Credit allowed by suppliers is 2 months.

— Delay in payment of wages is 1/2 (one-half) month and of overheads is 1 (one) month.

(iii) Interest on 12 percent debentures of Rs. 5,00,000 is to be paid half-yearly in June and December.

(iv) Dividends on investments amounting to Rs. 25,000 are expected to be received in June, 2010.

(v) A new machinery will be installed in June, 2010 at a cost of Rs. 4,00,000 which is payable in 20 monthly instalments from July, 2010 onwards.

(vi) Advance income-tax to be paid in August, 2010 is Rs. 15,000.

(vii) Cash balance on 1st June, 2010 is expected to be Rs. 45,000 and the company wants to keep it at the end of every month around this figure, the excess cash (in multiple of thousand rupees) being put in fixed deposit.

You are required to prepare monthly Cash budget on the basis of above information for four months beginning from June, 2010.

Ans. 7 (a) Computation of Annual cash flow

= (Annual Income before Tax & Depreciation - Depreciation) (1 – t) + Depreciation

Machine A

Annual Cash flow = (3,45,000 – 2,00,000) (1 – 0.30) + 2,00,000 = 3,01,500

Machine B

Annual cash flow = (4,55,000 – 2,50,000) (1 – 0.30) + 2,50,000 = 3,93,500

Machine A

Initial Outflow = 10,00,000

Computation of Cumulative Present – Value of Cash inflow

Year	Cash flow	Dis. Factor @ 12%	Disc. Cash flow	Cumulative Cash flow
1	301500	0.893	269240	269240
2	301500	0.797	240295	509535
3	301500	0.712	214668	724203
4	301500	0.636	191754	915957
5	301500	0.567	170950	1086907

Excess of P.V of cash flows over Initial outlay = 86,907

Computation of period required to recover excess amount of
Cumulative P. V over Project cost = 0.51 years

$$\left(\frac{86{,}907}{1{,}70{,}950}\right)$$

Discounted pay back period = 5 years – 0.51 years
= 4.49 years

Computation of Net Present Value

P.V of Annual Cash inflows = Annual cash inflow x PVAE (12%, 5 yrs.)
= 3,01,500 x 3.605 = Rs. 10,86,907

P.V of cash outflow = Rs. 10,00,000.

N. P. V = P.V of cash inflow – P. v of cash outflow
= Rs. 10,86,907 - Rs. 10,00,000 = Rs. 86,907

Machine B

Computation of cumulative P.v of cash flows

Year	Cash flows	Discount factor @ 12%	P.v of Cash Inflow	Cumulative Cash Inflow
1	393500	0.893	351396	351396
2	393500	0.797	313619	665015
3	393500	0.712	280172	945187
4	393500	0.636	250266	1195453
5	393500	0.567	223115	1418568
6	393500	0.507	199504	1618072

Excess of P.V of cash flows
Over cost of machine 1,18,072

Computation of period required to recover
Excess amount of cumulative
p.v over project cost 0.59 years

$$\left(\frac{1{,}18{,}072}{1{,}99{,}504}\right)$$

Discount pay – back period = 6 yrs – 0,59 yrs.
= 5.41 years

P. v of cash inflows = Rs. 16,18,072
P. v of initial cash outlay = Rs. 15,00,000
N.P.V. = P.v of cash inflows – P.v of initial outlay
= Rs. 16,18,072 - Rs. 15,00,000 = Rs. 1,18,072

Computation of IRR

	Machine I	Machine II
Initial outflow (a)	10,00,000	15,00,000
Annual cash inflows (b)	3,01,500	3,93,500

Factor to be allocated 3.3167 3.8120

$$\frac{a}{b}$$

By taking years rates as 12% & 14%

$$\text{IRR for machine A} = 12\% + \left(\frac{10{,}35{,}074 - 10{,}00{,}000}{10{,}86{,}907 - 10{,}35{,}074}\right) \times 2\%$$

$$= 13.35\%$$

$$\text{IRR for machine B} = 12\% + \left(\frac{15{,}30{,}191 - 15{,}00{,}000}{16{,}18{,}072 - 15{,}30{,}191}\right) \times 2\%$$

$$= 12.69\%$$

	Machine A	Machine B
N.P.V (a)	86,907	1,18,072
Estimated life	5 years	6 years
Annuity factor for estimated life (b)	3.605	4.112
Equalised Annual Value [EAV] = $\frac{(a)}{(b)}$	24,107	28,714

Since EAV of machine B is greater than machine A hence it is advisable to purchase machine B.

Ans. 7. (b) Cash budget (for June 2010 – Sept 2010)

Receipts	June	July	August	September
Opening balance	45000	45500	45500	45000
Cash sales	100000	98000	108000	122000
Receipt from Debtors (WN 1)	348000	380000	396000	412000
Dividend on investment	25000			
(a)	518000	523000	549500	579000

Payments

	June	July	August	September
Suppliers (WN 2)	200000	210000	260000	282000
Overheads (WN 3)	40000	38000	37500	60800
Wages (WN 4)	162500	165000	165000	167500
Intt. On debentures	30000	--	--	--
Installment on purchase of machinery	--	20000	20000	20000
Advance Income tax	--	--	15000	--
Fixed deposit (bal. fig.)	40000	45000	7000	3000
(b)	472500	478000	504500	533300
Closing balance (a- b)	45500	45500	45000	45700

Working note:-

(1) Computation of receipt of credit sales

	Credit sales	June	July	August	Sept
April	336000	168000	--	--	--
May	360000	180000	180000	--	--
June	400000	--	200000	200000	--
July	392000	--	--	196000	196000
Aug	432000	--	--	--	216000
		348000	380000	396000	412000

(2) Payment to suppliers

	Purchase	June	July	August	Sept
April	200000	200000	--	--	--
May	210000	--	210000	--	--
June	260000	--	--	260000	282000
July	282000	--	--	--	--
		200000	210000	260000	282000

(3) Payment of overheads

	Overhead	June	July	August	Sept
April	45000	--	--	--	--
May	40000	40000		--	--
June	38000	--	38000	--	--
July	37500	--	--	37500	--
Aug	60800	--	--	--	60800
		40000	38000	37500	60800

(4) Payment of wages

	Wages	June	July	August	Sept
April	160000	--	--	--	--
May	160000	80000	--	--	--
June	165000	82500	82500	--	--
July	165000	--	82500	82500	--
Aug	165000	--	--	82500	82500
Sept	170000	--	--	--	85000
		162500	165000	165000	167500

Qn. 8. Answer of the following :

(i) SK Limited has obtained funds from the following sources, the specific cost 3 are also given against them : **[3 marks]**

Source of funds	Amount Rs.	Cost of Capital
Equity shares	30,00,000	15 percent
Preference shares	8,00,000	8 percent
Retained earnings	12,00,000	11 percent
Debentures	10,00,000	9 percent (before tax)

You are required to calculate weighted average cost of capital. Assume that Corporate tax rate is 30 percent.

(ii) State the role of a Chief Financial Officer. **[3 marks]**

(iii) Distinguish between Fund Flow Statement and Cash Flow Statement. **[3 marks]**

Ans. 8 (i)

Source of fund	Weight (a)	COC (b)	WACC (c) = (a) x (b)
Equity shares	0.5	15%	7.5
Preference shares	0.13	8 %	1.04
Retained earnings	0.2	11%	2.2
Debentures	0.17	6.3%	1.071
	1.00		11.811

Weight

$$\text{Equity} = \frac{30 \text{ lacs}}{60 \text{ lacs}} = 0.5$$

$$\text{Pref.} = \frac{8 \text{ lacs}}{\quad} = 0.13$$

60 lacs

$$\text{Retained earnings} = \frac{12 \text{ lacs}}{60 \text{ lacs}} = 0.2$$

$$\text{Debentures} = \frac{10 \text{ lacs}}{60 \text{ lacs}} = 0.17$$

Ans. 8 (ii) Financial management has undergone a lot of changes during the recent years. A new era has begun with the development of new financial system, financial tools, techniques, instruments etc.

With these changes, the role of finance manger too has changed. Earlier his role was just confined to procurement of funds, But today, he occupies a central position in the organisation. He is the one who estimates and forecasts the financial requirement and then check out plans as to how to procure them and allocate them after processing. In this way, he shapes the destiny of the business enterprise. He has to keep himself abreast of the recent developments in the socio-economic scenario and to adopt and implement these in the business enterprise. This way, the enterprise adopts modern measures to meet the national and international requirements.

Today's market is the buyer's market. The business enterprise has to face tough competition from amongst the fellow competitors. The finance manager's role is to help out the business enterprise to face these competitions efficiently and to see that business gets along smoothly.

Thus, a finance manager's role is significant in context of today's era of liberalisation, deregulation and globalization.

Ans. 8 (iii) what is the difference between fund flow and cash flow

Fund Flow Vs Cash Flow statement.

Both are used in analysis of past transactions of a business firms. The major differences are:

1. Fund flow statements is based on the accrual accounting system. In case of preparation of cash flow statements, all transactions effecting the cash or cash equivalents is only taken into consideration.
2. Fund flow statement analyses the source and application of long term nature of the net increase and decrease of fund. The cash flow statement considers the increase and decrease of current assets and current liabilities.
3. Fund flow statements tallies the fund generated from various sources with variable uses to which they are put. Cash flow statements starts with opening balance of cash and reach to the closing balance of cash proceeding through sources and uses.