C.A. IPCC

Subject: Cost Accounting and Financial Management

Instructions :

(i) ***Question 1 is compulsory and attempt any four out of five***

(ii) ***Date of Examination :31-12-2011***

Answer 1 (a).

$$ECQ = \sqrt{\frac{2 \times Annual\ Consumption \times Buying\ Cost\ per\ Order}{Storage\ Cost\ per\ unit}}$$

$$= \sqrt{\frac{2 \times 200000 \times 20}{Rs.20 \times \left(\frac{2+8}{100}\right)}} = \sqrt{\frac{80,000}{2}} = 200\ Units$$

Total Annual Inventory Cost

Cost of 2,000 Units @ Rs. 20 (2,000 x 20)= Rs. 40,000

No. of Order $\frac{2000}{200}$ = Rs. 10

Ordering Cost 10 x10 = Rs.200

Carrying cost of Average Inventory $\frac{200}{2} \times 20 \times \frac{10}{100}$ = Rs.200 = Rs. 40,400

Answer. (b)

(i) Increase in Hourly Rate of Wages (Rowan Plan) is (Rs. 60 – Rs. 50) = Rs. 10

This is Equal to

$$\frac{Time\ Saved}{Standard\ Time} \times Hourly\ rate$$

Or 10 = $\frac{Time\ Saved}{Standard\ Time} \times 50$

Or $\frac{Time\ Saved}{90} \times 50$ = 10

Time Saved = $\frac{900}{50} = 18\ Hours$

Time Taken = (90-18) = 72 Hours

Effective Hourly Rate under Halsey System

Time Saved = 18 Hours

Bonus @ 40% = 18 x 40% x 50 = Rs.300

Total Wages = (50 x 72 + 360) = 3,960

Effective Hourly Rate = 3,960 ÷ 72 Hours = Rs. 55

Answer (c). Corporation of Rate of Interest and Revised Maturity Value

Principal = Rs. 10,000

Amount = Rs. 12,625

$$10{,}000 = \frac{12{,}625}{(1+l)^4}$$

P_0 = A x (PVFn, i)
10,000 = 12,625 (PVF 4, i)
0.7921 = ($PVF_{4\ i}$)
According to the Table or Present Value Factor ($PVF_{4\ i}$) of a lump sum of Re. 1, a PVF of 0.7921 for half year at interest (i) = 6 percent. Therefore, the annual interest rate is 2 x0.06 = 12 percent.
I = 6% for half year
I = 12% for full year.
Therefore, Rate of Interest = 12% per annum

$$\text{Revised Maturity Value} = 10{,}000\left(1+\frac{12}{100}\times\frac{1}{4}\right)^{2\times4}$$

$$= 10{,}000\left(1+\frac{3}{100}\right)^4$$

$$= 10{,}000(1.03)^8$$

= 10,000 x 1.267 [Considering ($CVF_{8,3}$) =1.267]
Revised Maturity Value = 12,670.

Answer (d) . Factors to be taken into consideration while determining the requirement of working capital

- Production policies
- Nature of the business
- Credit policy
- Inventory policy
- Abnormal policy
- Market conditions
- Conditions of supply
- Business cycle
- Growth and expansion
- Level of taxes
- Dividend policy
- Price level changes
- Operating efficiency

(4X5=20 Marks)

Answer 2. <u>Material Variances:</u>

(i) Material Cost Variance
= (SQ x SP) – (AQ x AP)
= (2,160 x 4 x10) – (22,800 x 4.40)
= Rs. 86,400 – Rs. 1,00,320 = 13,920 (A)

(ii) Material Price Variance
= AQ (SP – AP)
= 22,800 Kg (4-4.40) = 9,120 (A)

(iii) Material Usage Variance
= SP (SQ-AQ)
= 4 (21,600-22,8000 = 4,800 (A)
Note : unit basis for direct material has been taken as kg. hence, direct material rate is Rs. 4 per kg.

Verification :-
MOV = MPV + MUV
13,920 (A) = 9,120 (A)+ 4,800 (A)

Labour Variances:

(i) Labour Cost Variance
=(SH X SR) – (AH x AR)
= (2,160 x 2.50 x4) – (29,700)
= 21,600 – 29,700 = 8,100 (A)

(ii) Labour Rate Variance
= AH (SR-AR) = 5,940 (A) = 5.940(4-5)

(iii) Labour Efficiency Variance
= SR (SH – AP) = 4 (5,400 – 5.940) = 2,160 (A)

Verification:-
LCV = LRV + LEV :
8,109 (A) = 5,940 (A) + 2,160 (A)
SH = 2.160 Units x 2.50 Hours = 5,400 Hrs.

Answer (b) . Just in Time (JIT) purchases means the purchase of goods or materials such that delivery immediately precedes their use. The advantages of JIT purchases are:

1 **Cost savings :** JIT purchases results in cost savings. The costs of stock out, inventory carrying, materials handling and breakage are reduced.
2 **Cost of consumption :** Due to frequent purchases of raw materials, its issue price will be equal to the replacement price. The method of pricing for valuing material issues will be realistic to current costs.
3 **Supplier co-ordination :** Suppliers of raw materials co-operate with the company and supply requisite quantity of goods or materials for which order is placed just before the start of production.
4 **Materials management:** Goods spend less time in warehouses or on store shelves before they are exhausted. Risk of obsolescence is thereby reduced.

Answer (c) . Escalation clauses are often provided in contracts as safeguards against any likely changes its price or utilization of material and labour. Such a clause in a contract would provide that in the event of a specified contingency happening, the contract price would be suitably enhanced. This clause is particularly necessary where the price of certain raw materials are likely to rise, where labour rates are anticipated to increase, or where the quantity of material or labour time cannot be properly assessed or estimated unless the work has sufficiently advanced.

Whereas 'De- escalation or Reverse clause' provides for any future decrease in price etc. so that the benefit may be passed on to the contractee.

(10+3+3=16 Marks)

Answer 3 (a). Contract A/c for the year 31/3/08 (Rs in '000)

Particulars		**Amount**	**Particulars**	**Amount**
To Material Issue		7500	By Material Return	250
Planning & Est.		1000	CI. WIP	
Direct Wages	4000		Certified Work	20000
+ Outstanding wages	270	4270		
Plant hire charges		1750	Uncertified Work	149
Wage related		500	Plant (2000-300)	1700

Site office cost		678	Material	200
H.O. Expenses		375		
Direct Expenses		902		
Plant		2000		
P & L A/c	1662			
WIP Reserve	1662	3324		
Total		**22299**	**Total**	**22299**

1) Depreciation of Plant :-

$$\therefore \frac{20-5}{5} = 3 Lacs.$$

2) % of Work Completion $= \frac{20000}{35000} \times 100$

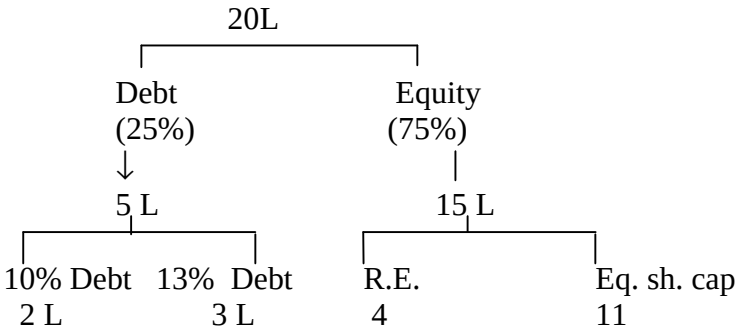
= 57.14%

3) Profit to be transferred to P&L :-

$$\therefore 3324 \times \frac{2}{3} \times \frac{15000}{20000}$$

= Rs. 1662

Answer (b).



1) 10% Debt

Kd = 10 (1-0.30) = 7%

2) 13% Debt Kd = 13 (1-0.30) = 9.1%

3) $Ke = \left(\frac{D_1}{P_0} \times 100\right) + 4\%$

$= \left(\frac{6.60}{60} \times 100\right) + 10\%$

= 21%

4) Kr = Ke (I-Personal Tax%)

= 21 (1-0.20)

= 16.8%

$D_1 = D_0 (1+ 9\%)$ = 6 (1.10) = 6.60 = D_0=12x50% = 6 Issue Price = Market Price

Capital	Rs.	X COC %	Rs.Avg. Cost
Eq. Sh. Cap	11,00,000	X 21%	= 2,31,000
RE	4,00,000	X 16.8	= 67,200

10% Debt	2,00,000	X 7%	= 14,000
13% Debt	3,00,000	X 9.1%	= 27,300
Total	**20,00,000**		**339500**

Ko = 7,39,500 x 100 = 16.975%

(8+8=16 Marks)

Answer 4 (a).

Process I Account

Particulars	***Units***	***Amount (in Rs.)***	***Particulars***	***Units***	***Amount (in Rs.)***
To Input	25,000	2,00,000	By Normal wastage	2,500	24,750
To Material		1,92,000	By Abnormal wastage	500	16,250
To Direct Labour		2,24,000	By Process II	22,000	7,15,000
To Manufacturing Exp.		1,40,000			
	25,000	**7,56,000**		**25,000**	**7,56,000**

$$\text{Cost per unit} = \frac{7,56,000 - 24,750}{25,000 - 2,500} = Rs.32.50\ per\ unit$$

Process II Account

Particulars	**Units**	**Amount** *(in Rs.)*	**Particulars**	**Units**	**Amount** *(in Rs.)*
To Processed	22,000	7,15,000	By Normal wastage	2,200	18,920
To Material		36,020	By Finished stock	20,000	9,90,000
To Direct Labour		1,28,000			
To Manufacturing Exp.		60,000			
To Abnormal effect	200	9,900			
	22,200	**10,08,920**		**22,200**	**10,08,920**

$$\text{Cost per unit} = \frac{9,99,020 - 18,920}{22,000 - 2,200} = Rs.49.50\ per\ unit$$

Abnormal Wastage Account

Particulars	*Units*	*Amount*	*Particulars*	*Units*	*A(in Rs).mount*
To Process I A/c	500	16,250	By Cash (Sales)	500	4,950
			By Costing Profit and Loss A/c		11,300
	500	**16,250**		**500**	**16,250**

Abnormal Effectives Account

Particulars	***Unit***	***Amount (in Rs.)***	***Particulars***	***Units***	***Amount (in Rs.)***
To Normal wastage	200	1,720	By Process II No	200	9,900
To Costing Profit and Loss		8,190			
	200	**9,900**		**200**	**9,900**

Answer (b).

Statement Showing evaluation of credit policy

Particulars	Existing	1	2	3	4
Sales	10,00,000	10,50,000	10,80,000	11,00,000	11,25,000
Less:Variable Cost 60% of Sales	600000	630000	648000	660000	675000
Contribution (A)	4,00,000	4,20,000	4,32,000	4,40,000	4,50,000
Other Cost :-					
Fixed Cost	2,00,000	2,00,000	2,00,000	2,00,000	2,00,000
Default %	10000	21000	32400	44000	57500
Cost of investment in Debtors (W.N.2)	20,000	27667	35333	40611	51042
Total (B)	2,30,000	27667	35333	40611	51042
Net Sales. (A-B)	1,70,000	1,71,333	1,64,267	1,55,389	1,31,458

Conclusion :
Credit policy 1 given a credit period of 60 days gives the maximum Net surplus which should be adopted by the company.

WN 1: Fixed Cost

(a) Existing units sold = $\frac{Sales}{Selling\ Price\ (P.U)}$

(b) Fixed Cost (P.U.)
Avg. Cost .4
-VC 3
1

(c) Fixed Cost
= Fixed Cost (P.U.) x Existing Unit Sold.
= 1 x2,00,000 = 2,00,000.

(d) % VC:-

SP	VC
5	3
∴ 100	?

= 60% of Sales

WN:2 Calculation of cost of investment in debtors

$$Existing = 8,00,000 \times \frac{45}{360} \times 20\% = 20,000$$

$$Policy\ 1 = 8,30,000 \times \frac{60}{360} \times 20\% = 27667$$

$$Policy\ 2 = 84,800 \times \frac{75}{360} \times 20\% = 35333$$

$$Policy\ 3 = 8,60,000 \times \frac{85}{360} \times 20\% = 40611$$

$$Policy\ 4 = 8,75,000 \times \frac{105}{360} \times 20\% = 51042$$

(10+6=16 Marks)

Answer.5 (a) Profit and Loss Account for Nine-o-Nine Limited

	February		March		Total	
	₹	₹	₹	₹	₹	₹
Sales		60,000		1,60,000		2,20,000
Cost of Purchases (75 percent)		45,000		1,20,000		1,65,000
Gross Profit		15,000		40,000		55,000
Less: Labour	3,000		5,000		8,000	
Expenses	6,000	9,000	7,000	12,000	13,000	21,000
		6,000		28,000		34,000

Working Notes:

(i) Receipts

		₹
February	75% of February Sales (75% × ₹ 60,000)	45,000
	+ 25% of January Sales (25% × ₹ 40,000)	10,000
		55,000
March	75% of March Sales (75% × ₹ 1,60,000)	1,20,000
	+ 25% of February Sales (25%× ₹ 60,000)	15,000
		1,35,000

(ii) Purchases

	January		February
	₹		₹
For January Sales (50% of ₹ 30,000)	15,000		
For February Sales (50% of ₹ 45,000)	22,500	(50% of ₹ 45,000)	22,500
For March Sales	-	(50% of ₹ 1,20,000)	60,000
	37,500		82,500

These purchases are paid for in February and March.

(iii) Expenses Cash expenses in January (Rs. 4,000 – Rs. 2,000) and February (Rs. 6,000 – Rs. 2,000) are paid for in February and March respectively. Depreciation is not a cash item.

Answer.(b) Nine – o - Nine Limited's Cash Budget for the Months of February and March

	February	March	Total
	₹	₹	₹
Receipts from Sales	55,000	1,35,000	1,90,000
Payments			
Trade Creditors	37,500	82,500	1,20,000
Expenses Creditors	2,000	4,000	6,000
Labour	3,000	5,000	8,000
Equipment Purchase	18,000	-	18,000
Dividend	-	20,000	20,000
Total Payments	60,500	1,11,500	1,72,000
Receipts less Payments	(5,500)	23,500	18,000
Opening Cash balance b/f	1,000	(4,500)	1,000
Closing Cash balance c/f	(4,500)	19,000	19,000

Answer (b) .

No. of Article produced = 600x12=7,200

Statement showing of operators in each opp.

Operation No.	**(a) Min/Article**	**(b): No. of min/week**	**(c=b/a) No. of Assistant/week**	$D = \frac{(7200)}{C}$
1	15	2,400 (40x60)	160	45
2	25	2,400	96	75
3	10	2,400	240	30
4	30	2,400	80	90
5	20	2,400	120	60
				300

Statement showing labour cost in each operation and total labour cost

Operation No.	**(a) No. of workers**	**(b) No of hours per worker**	**(c) Rate per hour**	**(d=axbxc) Labour cost**
1	45	40	0.65	1,170
2	75	40	0.50	1,500
3	30	40	0.40	480
4	90	40	0.35	1,260
5	60	40	0.30	720
				5,130

Labour cost / dozen $\frac{5130}{600} = 8.55$

(10+6=16 Marks)

Answer 6(a)

Safety Stock	Stock out units *	x Prob.	= Expected St. out units	Exp. St. Out Cost per unit	Carrying Cost R .10 Per unit	= Expected. Cost (Rs.)
0	50 (50) 100 (100) 250 (250) 400 (400) 500 (500)	0.10 0.04 0.03 0.02 0.01	5 4 7.5 8 5	 29.5 X 100	 0 X 10	
			29.5	2950	NIL	=2950
50	50 (100) 200 (250) 350 (400) 450 (500)	0.04 0.03 0.02 0.01	2 6 7 4.5	19.5 X 100	50 X 10	
			19.5	1950	500	=2450
100	150(250) 300 (400) 400 (500)	0.03 0.02 0.01	4.5 6 4	14.5 X 100	100 X 10	
			14.5	1450	1000	=2450
250	150 (400) 250 (500)	0.02 0.01	3 2.5	5.5 x 100	250 X 10	
			5.5	550	2500	=3050

400	100 (500)	0.01	1	100	4000	=4100
500	-	-	-	-	5000	=5000

* In ()→ There is a requirement of units is available.

Answer. (B)

Profitability Statement

Particulars	36000	36000 x ⅓ - 12000 +36000 = 48000
Sales (36000x12) (48000x12)	4,32,000	5,76,000
- R.M (36000 x 4) (48000x4)	1,44,000	1,92,000
- Wages (36000 x2) (48000 x 2)	72,000	96,000
- Fixed O/H. (36000 x1) (48000 x0.72)	36000	36000
Net Profit	108000	156000
St of Net Working Capital.		
CA: Raw material $\left(\frac{192000}{12}\times 1\right)$	16000	
W/P Stock $\left(192000+48000+48000+18000\times\frac{1}{12}\right)$	25500	
F. Goods. $\left(\frac{4,20,000}{12}\times 1\right)$	35000	
Debtors $\left(\frac{5,76,000}{12}\times 2\right)$	96000	
Cash balance.	19500	
Total C.A. (A)	193000	
Less : Cc: Cr.for R.M. $\left(\frac{1,92,000}{12}\times 3\right)$	48,000	
Wages. $\left(\frac{96000}{12}\times 1\right)$	8000	
Net Working Capital = 1,25,000 9600 36000 x ½	11000	

Assumption

1) Debtors are valued at sales
2) In WIP raw – material in 100% & Wage O/H are 50% Complete.

*Conclusion:- The cost is minimum @ the safety stock level at 100 &50 units. Therefore both can be consider as the optimum safety stock Level. It is up to the company that out of these two, which stock it would like to maintain as a safety stock.

(6+10=16 Marks)

Answer 7 (a) . Treatment of by-product cost in Cost Accounting:

(i) When they are of small total value, the amount realized from their sale may be dealt as follows:

 Sales value of the by-product may be credited to Profit and Loss Account and no credit be given in Cost Accounting. The credit to Profit and Loss Account here is treated either as a miscellaneous income or as additional sales revenue.

 The sale proceeds of the by product may be treated as deduction from the total costs. The sales proceeds should be deducted either from production cost or cost of sales.

(ii) When they require further processing: In this case, the net realizable value of the by product at the split-off point may be arrived at by subtracting the further processing cost from realizable value of by products. If the value is small, it may be treated as discussed in (i) above

Answer (b). Forms of Bank Credit

The various forms of bank credit in financing the working capital of a business organisation are:

(a) Cash credit;
(b) Bank overdraft;
(c) Bills discounting;
(d) Bill acceptance;
(e) Line of credit;
(f) Letter of credit; and
(g) Bank guarantees.

Answer (c) . Stock Verification involves counting of actual stock available and comparing the same with books and records to ascertain discrepancies if any. There are two methods of stock verification namely Periodic and Continuous Stock Verification. The differences between these two methods are :

Periodic Stock Taking	Continuous Stock Taking
Stock Verification takes place at the end of a financial period, say a year.	Stocks are verified at regular intervals during the year. Since stocktaking takes place regularly, it is called continuous stocktaking.
All items of stocks are covered in a single stretch of verification, say over two or three days.	In each verification, two or three items are covered. In a entire period, all items are covered on rotation basis.
Regular stores procedures like materials receipts, issues etc. may have to be stopped to facilitate stock taking.	There is no interference with regular work flow.
Discrepancies can be known only at the end of the period. Responsibility cannot be easily fixed.	Discrepancies are ascertained immediately in order to take corrective action and avoid recurrence.
Inventory Records may also be updated periodically, say weekly or monthly, infact, at any time before physical verification.	Due to surprise element involved, Inventory records must be maintained uptodate at all times.-This is called Perpetual Inventory Records.
This does not facilitate or help the quick compilation of interim or final financial results.	It provides stock figures on real-time basis. Hence final accounts can be compiled quickly. Interim results can also be prepared conveniently.

Answer (d) . Factoring is a "continuing" arrangement between a financial intermediary called a "Factor" and a "Seller" (also called a client) of goods or services. Based on the type of factoring, the factor

performs the following services in respect of the Accounts Receivables arising from the sale of such goods or services.

- Purchases all accounts receivables of the seller for immediate cash.
- Administers the sales ledger of the seller.
- Collects the accounts receivable.
- Assumes the losses which may arise from bad debts.
- Provides relevant advisory services to the seller.

Factors are usually subsidiaries of banks or private financial companies. It is to be noted that factoring is a continuous arrangement and not related to a specific transaction. This means that the factor handles all the receivables arising out of the credit sales of the seller company and not just some specific bills or invoices as is done in a bills discontinuing agreement.

Answer (e) . Gantt task and bonus system : Wages payable to workers under Gantt task is calculated as under :

Output Payment

Output below standard	Guaranteed time rate.
Output at standard	Time rate *plus* bonus of 20% (usually) of time rate.
Output above standard	High piece rate on worker's whole output.

It is so fixed, so as to include a bonus of 20% of the time rate.

Rowan system : Under Rowan System the bonus is that proportion of the time wages as time saved bears to the standard time.

Formula for calculating wages under Rowan system

= Time taken × Rate per hour + Time Saved / Time Allowed X Time Taken X Rate per hour

(4X4=16 Marks)