Prepare Contract No.121 A/c for 2008-2009 appropriating profit on the basis of percentage of work certified to total value of contract as reduced by the percentage of cash received to work certified. The contract price is ₹ 20,00,000.

(Ans. Notional Profit is ₹ 1,42,333 out of which ₹ 45,547 is taken to P&L A/c)

Q.14. At the end of year, a Contract Accounts stands debited with the cost of materials issued, labour and overheads expended and plant issued, and it stands credited with materials at site ₹ 2,000 and plant at site re-valued at ₹ 8,000, after charging depreciation at 20%. The net cost of contract is ₹ 30,000. The materials, labour and overheads debited to the Contract Account are in the ratio of 3 : 2 : 1. The contract price is ₹ 50,000. 4/5 of the contract has been certified by the contractee's architect as completed, a month before the end of the year and 80% of the certified work value has been received in cash. The accountant informs that $\frac{2}{3}$ of the profit on cash basis credited to profit and loss account on the contract is ₹ 8,000. Prepare the Contract Account for the current year 2000-01 showing the cost of work done but uncertified, and the Work-in-progress from the above information.

Prepare the Contract Account for the current year.

(Ans. Notional profit is ₹ 15,000 and ₹ 8,000 is taken to P&L A/c).

Q.15. M/s Manholes and Sewers Ltd. Undertook for erecting a sewerage treatment plant for a municipality for a total value of ₹ 24 lakhs. You are required to prepare a contract account for the year ending 31st March 2008, from the following particulars:

(i) Wages ₹ 6,00,000. (ii) Special plant ₹ 2,00,000. (iii) Materials ₹ 3,00,000. (iv) Overheads ₹ 1,20,000 (v) Depreciation @ ₹ 10% to be provided on plant. (vi) Materials lying at site on 31.3.2008 ₹ 40,000 (vii) Work certified was to the extent of ₹ 16,00,000 and 80% of the same was received in cash. (viii) 5 per cent of the value of materials issued and 6 per cent of wages and overheads of 20% of related wages may be taken to have been incurred for the portion of work completed but not yet certified. (ix) Ignore depreciation on plant for use on uncertified portion of the work. (x) Ascertain the amount to be transferred to profit and loss account on the basis of realised profit.

(Ans. Cost of work uncertified = ₹ 58,200; Notional Profit ₹ 6,58,200)

Q.16. Messrs Kishore and Company commenced the work on a particular contract on 1st April 2009. They close their books of accounts for the year on 31st December each year. The following information is available from their costing records on 31st December, 2009:

Material sent to site ₹ 50,000; Foreman's salary ₹ 12,000; Wages paid ₹ 1,00,000.

A machine costing ₹ 32,000 remained in use on site for 73 days during the year. Its working life was estimated at 5 years and scrap value at ₹ 2,000. A supervisor is paid ₹ 2,000 per month and had devoted one-half of his time on the contract.

All other expenses were ₹ 15,000. The materials on site were ₹ 9,000. The contract price ₹ 4,00,000. On 31st December, 2009, 2/3 of the contract was completed; However, the architect gave certificate only for ₹ 2,00,000 on which 75% was paid. Prepare the Contract Account.

(Ans. Cost of work uncertified = ₹ 44,550; Notional Profit = ₹ 66,350)

Q.17. M/s. Everfine Constructions commenced a contract for the construction of a Bunglow on 1st July, 2000. Originally the contract price was ₹ 50,00,000 but finally the same was fixed at ₹ 45,00,000.

Their actual expenditure during the year 2000 and estimated expenditure during 2001, till the completion of the contract is as under:–

Particulars	*Actual Expenditure upto 31-12-2000*	*Estimated Expenditure during 2001*
Building Materials	8,00,000	13,00,000
Labour Charges	6,00,000	6,00,000
Plant installed at site (at cost)	4,00,000	–
Materials at site on 31-12-2000	50,000	–
General Expenses	2,50,000	3,55,000
Plant returned to stores at cost at the end of the year	1,00,000	–
Works certified	20,00,000	–
Works uncertified	75,000	contract completed
Cash Received	90% of the work certified	45,00,000

The contract is expected to be completed by 30th September, 2001.

The plant is subject to depreciation at 20% p.a. on the original cost.

In order to calculate the correct account of profit made on the contract for the year 2000, it was decided to take certain proportion of the estimated profit on completion of the contract to the credit of Profit and Loss Account; such proportion being cash received to the total contract price.

Prepare the Contract Account for the year ending 31st December, 2000 and work out the estimated profit on the completion of the contract by 30th September, 2001.

(Ans. Notional Profit is ₹ 4,35,000 and ₹ 2,04,000 is taken to P/L A/c)

Q.18. The following Trial Balance was extracted on 31st December, 2001 from the books of Swastick Co. Ltd. Contractors:

(₹)

Particulars	*Dr.*	*Cr.*
Share capital (shares of ₹ 10 each)		3,50,000
Profit and Loss A/c on 1-1-2001		25,000
Provision for depreciation of machinery		63,000
Cash received on account of Contract No.10		12,80,000
Creditors		82,000
Land and Buildings (Cost)	70,000	
Machinery (Cost)	52,000	
Bank	48,000	
Contract No. 10:		
Materials	6,10,000	
Direct Labour	8,40,000	
Expenses	20,000	
Machinery on Site (Cost)	1,60,000	
	18,00,000	18,00,000

Contract No. 10 was begun on 1st January 2001. The contract price is ₹ 24,00,000 and the contractee has, so far, paid ₹ 12,80,000 being 80% of work certified. The cost of work done since certification is estimated at ₹ 20,000. On 31st December, 2001, after the above Trial Balance was extracted, machinery costing ₹ 32,000 was returned to stores and materials then on site were valued at ₹ 23,000.

Provision is to be made for direct labour due ₹ 6,000 and for depreciation on all machinery at 12½% on cost. You are required to prepare (a) Contract account, and (b) Balance Sheet of the company as on 31-12-2001.

(Ans. Notional Profit is ₹ 1,47,000 and ₹ 78,400 is taken to P/L A/c)

Q.19. XYZ Ltd. was engaged on one contract during the year 2001. The contract price was ₹ 2,00,000. The trial balance extracted from the books on 31-12-2001 stood as follows:

Particulars	*Dr.*	*Cr.*
Share capital		40,000
Sundry creditors		4,000
Building	17,000	
Cash at Bank	4,500	
Contract a/c :		
Materials	37,500	
Plant	10,000	
Wages	52,500	
Cash received from contractor (80% of work certified)		80,000
Expenses	2,500	
	1,24,000	1,24,000

Of the plant and materials charged to the contract, plant costing ₹ 1,500 and materials costing ₹ 1,200 were destroyed by an accident. On 31-12-2001 plant costing ₹ 2,000 was returned to stores and material at site was valued at ₹ 1,500. Cost of uncertified work was ₹ 1,000. Charge 10% as depreciation on plant. Prepare contract account for the year 2001 and Balance Sheet as on 31-12-2001.

(Ans. Notional Profit is ₹ 10,350 and ₹ 5,520 is taken to P/L A/c)

Q.20. Mr. Behram Contractor has undertaken two contracts one at Mubai and another at Thane. The details of the contracts are given below for the year ended 31st March, 2001:

(₹)

Particulars	*Contract at Mumbai*	*Contract at Thane*
Date of Commencement	*1st July, 2000*	*1st Oct., 2000*
Contract Price	10,00,000	15,00,000
Direct Labour	2,55,000	1,82,000
Material issued from stores	2,20,000	2,00,000
Material returned	10,000	15,000
Plant installed at site	2,00,000	3,50,000
Direct Expenses	40,000	30,000
Overheads	15,000	10,000
Material sold (cost ₹ 8,000)	10,000	–
Material at Site	18,000	16,000
Cash received from contractee (representing 80% of work certified)	4,80,000	1,92,000
Work uncertified	13,000	9,000
Architects Fees	7,000	3,000

(i) Provide depreciation on plant at 20% p.a.

(ii) During the year materials costing ₹ 10,000 were transferred from Thane contract to Mumbai contract.

You are required to prepare contract A/c. of Mumbai and Thane contracts.

(Ans. Notional Profit from Mumbai Contract ₹ 72,000 and loss from thane contract ₹ 1,70,000)

Q.21. Rajesh Contractor obtained a contract to build a house at a contract price of ₹ 15,00,000. The Contractee agrees to pay 90% of the value of the work done as certified by the architect immediately on receipt of the certificate and to pay the balance after completion of the Contract.

The contractor commenced the work on 1st May, 1999. A Plant costing ₹ 20,000 was specially bought for the contract. The value of the plant at the end of 1999, 2000 and 2001 was ₹ 16,000; ₹ 10,000 and ₹ 4,000 respectively. The work done and certified by the architect as at the end of 1999 and 2000 was ₹ 3,50,000 and ₹ 11,50,000 respectively. Work costing ₹ 20,000 done as at the end of 2000 was not certified as on that date.

Other details of the contract were as under: ₹

Particulars	*1999*	*2000*	*2001*
Material sent to the site	1,80,000	2,20,000	1,26,000
Wages paid	1,70,000	2,30,000	1,70,000
Direct Expenses incurred	7,000	25,000	9,000
Indirect Expenses incurred	3,000	4,000	–

You are required to prepare contract account for the year ended 31st December, 1999, 2000 and 2001, considering that contract is fully completed in 2001.

(Ans. Amount taken to P/L A/c ₹ 2,01,000 is 2,000 and ₹ 1,53,000 in 2001. There is loss of ₹ 14,000 in 1999).

Q.22. The following information relate to a road contract for ₹ 10,00,000. ₹

	2000	*2001*
Materials Issued	3,00,000	84,000
Direct Wages	2,30,000	1,05,000
Direct Expenses	22,000	10,000
Indirect Expenses	6,000	1,400
Work Certified	7,50,000	10,00,000
Work not Certified	8,000	–
Materials at site	5,000	7,000
Plant Purchased	14,000	2,000
Cash Received from Contractee	6,00,000	4,00,000

The value of Plant at the end of 2000 and 2001 were ₹ 7,000 and ₹ 5,000 respectively.

Prepare (i) the Contract A/c and (ii) the Contractee A/c for the years 2000 and 2001 taking into consideration such profit for transfer to profit & Loss A/c as you think proper.

(Ans. Amount taken to P/L A/c ₹ 1,05,600 in 2000 and ₹ 1,32,000 in 2001).

Q.23. A firm of building contractors began to trade on 1-4-2000. The following was the expenditure on the contract for ₹ 30,00,000. *(₹)*

Materials issued to contract	5,10,000
Plant issued for the contract	1,50,000
Wages issued	8,10,000
Other Expenses	50,000

Cash received on account to 31-3-2001 amounted to ₹ 12,80,000 being 80% of the work certified of the materials and plant charged to contract, plant which cost ₹ 30,000 and

materials which cost ₹ 25,000 were lost on 31-3-2001, plant which cost ₹ 20,000 were returned to stores. The cost of work done uncertified was ₹ 10,000 and materials costing ₹ 23,000 were in hand on site.

Charge 15% depreciation on Plant. Prepare the Contract Account and show the relevant particulars in the Balance Sheet. No depreciation is to be charged on lost plant.

(Ans. Notional Profit is ₹ 2,70,u00 and ₹ 1,44,000 is taken to P/L A/c)

Q.24. ABC Ltd. began to trade on 1st Ja iuary, 2006. During 2006 the company was engaged on only one contract of which the contract price was ₹ 5,00,000. Of the plant and materials charged to the contract, plant which cost ₹ 5,000 and materials which cost ₹ 4,000 were lost in an accident. On 31st December, 2006 plant with original cost of ₹ 5,000 was returned to the store, the cost of work done but uncertified was ₹ 2,000 and materials costing ₹ 4,000 were in hand on site. Charge 10% depreciation on plant. Prepare Contract Account and the Balance Sheet from the following:

Trial Balance as on 31st December, 2006

	₹	₹
Share capital		1,20,000
Creditors		10,000
Cash received (80% of work certified)		2,00,000
Land and Building	43,000	
Bank Balance	25,000	
Charged to contract:		
Materials	90,000	
Plant	25,000	
Wages	1,40,000	
Expenses	7,000	
	3,30,000	3,30,000

(Ans. Notional Profit is ₹ 21,000 and ₹ 11,200 is taken to P&L A/c)

Q.25. The following details are available from the books of accounts of a contractor with respect to a particular construction work for the year ended 31st March, 2009 :

	₹
Contract price	1,00,00,000
Cash received from contractee (90% of work certified)	71,91,000
Material sent to site	35,82,600
Planning cost	3,50,000
Direct wages paid	32,62,700
Cost of plant installed at site	7,00,000
Direct expenses paid	1,68,000
Establishment expenses	2,03,000
Material returned to store	14,840
Head office expenses apportioned	2,50,000
Cost of work uncertified	3,17,000
On 31st March, 2009	
Material at site	85,400
Accrued direct wages	78,120
Accrued direct expenses	9,310
Value of plant (as revalued)	6,16,000

Required :

(i) Prepare the contract account for the year ended 31st March, 2009.
(ii) Show the relevant Balance Sheet entries.

Ans.: ***Notional Profit ₹ 4,19,510.***

Q.26. From the following information, prepare the Contract Account for the year ended 30:09:2012 :

Contract Price	₹ 50 lakhs	
Work certified	₹ 20 lakhs	(cash received 90% of value certified)
Materials at site on 30:09:2012	₹ 30,000	
Depreciation on Plant and Machinery	₹ 75,000	

During the year the following expenses were incurred in respect of the above contract :

Material sent to site	₹ 14,00,000
Wages	₹ 2,55,000
Site expenses	₹ 5,000
Power and Fuel	₹ 1,25,000
Office Expenses	₹ 12,000
Rate and Taxes	₹ 15,000

Ans. ***Notional Profit ₹1,43,000.***

Q.27. A construction company undertook a contract at an estimated price of ₹ 108 lakhs which includes a budgeted profit of ₹ 18 lakhs. The relevant data for the year ended 31:03:2002 are as under :

	(₹000's)
Materials issued to site	5,000
Direct wages	3,800
Plant hired	700
Site office costs	270
Materials returned from site	100
Direct expenses	500
Work certified	10,000
Progress payments received	7,200

A special plant was purchased specifically for this contract of ₹ 8,00,000 and after use on this contract till the end of 31:03:2002, it was valued at ₹ 5,00,000. The cost of materials at site at the end of the year was estimated at ₹ 18,00,000. Direct wages accrued as on 31:03L2002 was ₹ 1,10,000.

Required :
Prepare the Contract Account for the year ended 31st March, 2002 and compute the profit to be taken to the profit and loss account.

Ans. ***Notional Profit ₹12,20,000.***

Q.28. Kunal Construction signed a contract for the construction of a building at a contract price of ₹ 30 lakhs. During the first year, the following amounts were spent, against which ₹ 11,25,000 (which is equal to 90% of the work certified) was received by the contractor :

Material used	₹ 5,25,000
Wages paid	3,00,000
Overhead expenses	75,000

The following expenses were incurred during the second year :

Material	₹ 7,50,000
Wages	6,00,000
Overheads	1,50,000

During the second year, the contract was completed. In the second year, ₹ 18,75,000 was received by the contractor.

Prepare the contract account and the contractee's account for both the years and determine the profits.

Ans. ***Amount transferred to Profit & Loss Account ₹1,05,000 in year 1 and ₹4,95,000 in year 2.***

Solutions to Revisionary Problems

Answer to Q. No. 1 :

Contract A/C No.777

Particulars	Amount	Particulars	Amount
To Material Purchased	58,063	By Materials at site c/d	9,858
To Material Form store	9785	By Plant at site c/d	18,870
To Plant Issued	20,000	By WIP (Value of work certified) $\left(\frac{1,20,800}{80}\times 100\right)$	1,51,000
To Wages	73,634		
To Direct Exp.	2,026		
To Establishment Exp.	8,720		
To Notional Profit c/d	7,500		
	1,79,728		1,79,728
To P/L	4,000	By Notional Profit b/d	7,500
To WIP (Reserve)	3,500		
	7,500		7,500

***Working Note*:**

Note 1 : Percentage of completion of contract

$$= \frac{\text{Value of work certified}}{\text{Total contract price}} \times 100$$

$$= \frac{1,51,000}{3,00,000} \times 100 = 50.33\%$$

Note 2 : Amount to be transferred to profit/Loss A/C is-

$$\frac{2}{3} \times \text{Notional profit} \times \frac{\text{Cash received}}{\text{Work Certified}}$$

$$\frac{2}{3} \times 7500 \times \frac{80}{100} \qquad = ₹\ 4000$$

Answer to Q. No. 2 :

Contract A/C

Particulars	Contract 1	Contract 2	Particulars	Contract 1	Contract
To Expenditure			By Material at site c/d	4000	4000
Materials	72000	58000			
Wages	110000	112000	By Plant at site c/d	18000	15200
General Charges	4000	2800	By WIP		
To Plant installed	20000	16000	Work Certified	2,00,000	160000
To Wages accrued	4000	4000	Work uncertified	6000	8000
To Notional Profit c/d	18000	Nil	By P/L A/C (Loss)	Nil	5600
	288000	192800		228000	192800
To P/L A/c (2/3 ×18000 ×150000/20000)	9000	NIL	By Notional profit b/d	18000	NIL
To WIP (Reserve)	9000	NIL			
	18000	NIL		18000	NIL

Note : Contract 1 has commenced on 1st January, 2009 and Contract 2 on 1st July, 2009. As such, depreciation @ 10% has been provided on Contract 1 for 12 months and on Contract 2 for 6 months.

Answer to Q. No. 3 : **Contract A/C**

Particulars	Amount	Particulars	Amount
To Material	75,000	By Plant at site c/d	19,000
To wages Paid	1,10,000	By Material at site c/d	4,000
To General Charges	4,000	By Material transfer to other contracts	4,000
To Plant Installed on 1/7/2008	20,000	By WIP	
To Wages due	4,000	Work Certified	2,00,000
To Material Received from other contracts	1,000	Work uncertified	6,000
To Notional Profit c/d	19,000		
	2,33,000		**2,33,000**
To P/L A/C	9,500	By Notional profit b/d	19,000
To WIP (Reserve)	9,500		
	19000		**19,000**

Amount Transferred to P/L A/C is calculated as follows-

$$2/3 \times 19000 \times \frac{1,50,000}{2,00,000} \text{ (Because 50\% work is certified to date)}$$

$$= \quad ₹\ 9,500$$

Answer to Q. No. 4 : **Contract A/C**

Particulars	Amount	Particulars	Amount
2008		**2008**	
To Material	1,80,000	By WIP	
To Wages	170,000	Work Certified	3,75,000
To Carriage	6,000		
To Cartage	1,000	Work uncertified	Nil
To Sundry Exp.	3,000		
To Notional Profit c/d	15,000		
	3,75,000		**3,75,000**
To P/L 1/3×15,000×80/100	4,000	By Notional Profit b/d	15,000
To WIP (Reserve)	11,000		
	15,000		**15,000**
2009		**2009**	
To WIP (Opening Bal.)		**By Reserve (WIP)**	11,000
Work certified	3,75,000	**By WIP**	
		W.Certified 11,25,000	
To Material	2,20,000	W. Uncertified 20,000	11,45000
Wages	2,30,000		
Carriage	23,000		
Cartage	2,000		
Sundry Exp.	4,000		
To Notional Profit c/d	3,02,000		
	11,56,000		**11,56,000**
To P/L A/C (2/3 × 302000 × 80/100)	1,81 067	By Notional Profit b/d	3,02,000
To WIP(Reserve)	1,40,933		
	3,02,000		3,02,000

2010		2010	
To WIP (Opening Bal).		By Reserve (WIP)	1,40,933
W. Certified 11,25,000 W. Uncertified 20,000	11,45,000	By Contractee A/c.	15,00,000
To Materials	1,26,000		
Wages	1,70,000		
Cartage	6,000		
Sundry Exp.	3,000		
To P&L A/C	1,90,933		
	16,40,933		**16,40,933**

Answer to Q. No. 5 :

Contract Account

From 1-4-2007 to 31-3-2008

Particulars	Amount	Particulars	Amount
To Wages	1,40,000	By Bank (Material sold)	11,500
To Plant	35,000	By Bank (Plant Sold)	1,7000
To Materials	1,05,000	By Plant at site c/d	8,000
		By Materials at Site c/d	3,000
To H.O. Exp.	12,500	By cost of contract to date c/d	2,69,800
To P&L A/C(Profit on materials sold)	1,500		
	2,94,000		**2,94,000**
To cost of contract to date b/d	2,69,800	By WIP	
To Notional profit c/d	55,200	W. Certified	3,00,000
		W. Uncertified	25,000
	3,25,000		**3,25,000**
To P&L A/C	36,120	By Notional	
To WIP (Reserve)	19,080	Profit b/d	55,200
	55,200		**55,200**

According to the question the amount to be transferred to P&L is calculated as follows: -

$$\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}}$$

$$= 60,200 \times \frac{3,00,000}{5,00,000}$$

= ₹ 36,120

Computation of estimated profit:

	₹
Cost of contract to date	2,69,800
(+) Estimated additional cost	
1. Materials used (3000+50,000)	53,000
2. Plant used (8,000+15,000-6,000)	17,000
3. Wages	84,750
4. H.O. Expenses (12,500 × 6/12)	5,250
5. Contingencies	9,000
Total estimated cost	4,39,800

Contract Price = ₹ 5,00,000
Estimated Profit = 5,00,000 – 4,39,800
= 60,200

Answer to Q. No. 6 :

Contract Account
For the year ended on 31-03-2009

Particulars	₹ '000'	Particulars	₹ '000'
To Materials	7,500	By Materials returned	250
To Wages 4,000		By Materials at site c/d	200
(+) Accrued, 270	4,270	By work in progress	
To contract related cost	500	(a) Work certified	20,000
To Direct Expenses	902	(b) W. Uncertified	149
To Plant hire charges	1,750		
To Planning & Estimating	1,000		
To site office cost	678		
To H.O. Expenses	375		
To Dep. On Plant	300		
To Notional Profit c/d	3,324		
	20,599		**20,599**
To P & L A/c	1,662	By Notional Profit b/d	3,324
To WIP (Reserve)	1,662		
	3,324		**3,324**

Since the completed work on the contract is more than 50 %, the amount to be transferred to P&L is computed as follows:

$$= 2/3 \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

$$= 2/3 \text{ ₹ } 3{,}324 \text{ thousands} \times \frac{15{,}000 \text{ thousand}}{20{,}000 \text{ thousand}}$$

= ₹ 1,662 thousands.

Balance Sheet (Extracts)
As on 31-03-2009

Liabilities	₹	Assets		₹
Wages Outstanding	270	Plant at site (2,000-300)		1,700
Profit and Loss A/C	1,662	Materials at stores		250
		Materials at site		200
		Work-in-Progress		
		W. Certified	20,000	
		W. Uncertified	149	
		(–) Adv. Recd.	(15,000)	
		(–) Reserve	(1,662)	3,487

Answer to Q. No. 7 :

Multistory Building Construction Account for the year ending on 30th June

Particulars	₹	Particulars	₹
Materials	1,80,000	Plant at site at the end	27,000
Plant	30,000	Materials in hand at the end	7,500
Wages	2,46,600	Cost of contract to date c/d	4,42,600
Direct expenses	12,900		
Misc. expenses	600		
General overheads	7,000		
	4,77,100		4,77,100
Cost of contract to date b/d	4,42,600	Work in progress:	
Notional Profit c/d	22,400	Work certified	4,50,000
		Work Uncertified	15,000
	4,65,000		4,65,000
P & L A/c. (2/3 x 22,400 x 80/100)	11,946	Notional Profit b/d	22,400
WIP (Reserve)	10,454		
	22,400		22,400

Note – Since half of the contract has been completed 2/3 of profit as reduced on Cash basis may be credited to P/L A/c .

Balance sheet as on June 30

Liabilities	₹	Assets		₹
Profit & Loss A/c	11,946	Plant at site		27,000
		Material at site		7,500
		Work- in- Progress		
		Work Certified	4,50,000	
		Work Uncertified	15,000	
		(-)Reserve	(10,454)	
		(-) Adv. Recd.	(3,60,000)	94,456

Answer to Q. No. 8 :

Contract Accounts for the year ending on 31-03-2010

Particulars	A	B	C	Particulars	A	B	C
Material	14,400	11,600	4,000	Value of work Certified	40,000	32,000	7,200
Wages paid	22,000	22,400	2,800	Cost of work uncertified	1,200	1,600	420
Wages accrued	800	800	360	Material on hand	800	800	400
General Charges	800	560	200	Plant at site	3,600	3,040	2,340
Plant issued	4,000	3,200	2,400	Loss trans. To P&L A/C		1,120	
Notional profit c/d	3,600	-	600				
	45,600	38,560	10,360		45,600	38,560	10,360
Profit credited to P&L A/C	1,800	--	---	Notional Profit b/d	3,600	---	600
Reserve on WIP	1,800	--	600				
	3,600	--	600		3,600	--	600

1. Profit of contract A credited of P&L A/C=Notional Profit $\times \frac{2}{3} \times \frac{\text{Cash Received}}{\text{Work Certified}}$

$$= 3,600 \times \frac{2}{3} \times \frac{30,000}{40,000} = 1,800$$

2. In case of contract B, there is loss. It is fully debited to P&L A/C

3. In case of contract C, the value of work certified is less than 25% of the contract price. Therefore no profit is credited to P&L A/c. Entire notional profit is kept as Reserve on WIP.

Balance Sheet (Extracts only) as on 31-3-2010

Liabilities		₹	Assets		₹
Outstanding Wages:			Material at site		
Contract A	800		At contract A	800	
Contract B	800		At Contract B	800	
Contract C	360	1,960	At contract C	400	2,000
			Plant at site		
P&L A/c :			At Contract A	3,600	
Profit from contract A	1,800		At Contract B	3,040	
Less loss on Contract B	(1,120)	680	At Contract C	2,340	8,980
			WIP at contract A:		
			Work Certified	40,000	
			Work uncertified	12,000	
			Less: Reserve on WIP	1,800	
			Less : Advance	30,000	20,200
			WIP at contract B:		
			Work certified	32,000	
			Work uncertified	1,600	
			Less: Contractee advance	24,000	9,600
			WIP at Contract C:		
			Work certified	7,200	
			Work uncertified	420	
			Less: Reserve on WIP	600	
			Less: Contractee advance	5,400	1,620

Answer to Q. No. 9 :

Contract Account for the year ended on 31-12-2009

	₹		₹
To Materials	90,000	By P & L A/c (Materials lost)	4,000
To Wages	1,40,000	By Materials at site c/d	4,000
To Expenses	7,000	By Work-in-Progress	
To Dep. On Plant	2,000		
		W. Certified $\left(2,00,000 \times \frac{100}{80}\right)$	2,50,000
To Notional Profit c/d	21,000	W. Uncertified	2,000
	2,60,000		2,60,000
To P & L A/c $\left(\frac{2}{3} \times 21,000 \times \frac{80}{100}\right)$	11,200	By Notional Profit b/d	21,000
To WIP (Reserve)	9,800		
	21,000		**21,000**

Plant Account

	₹		₹
To opening balance	25,000	By P & L A/c (Plant lost)	5,000
		By Depreciation (10% of 20,000)	2,000
		By Plant returned (5,000 less 10% Dep.)	4,500
		By Closing balance (15,000 less 10% Dep.)	13,500
	25,000		25,000

Note:

1. It is assumed that the plant of ₹ 5,000 was lost at the beginning of the year
2. Since work certified is equal to half of contract price, profit has been ascertained on the basis of 2/3rd and cash basis.

Balance Sheet as on 31st December 2009

Particulars		₹	Particulars	₹	₹
Share capital		1,20,000	Land and building		43,000
Profit on Contract	11,200		Plant at stores	4,500	
Less Abnormal loss	9,000	2,200	Plant at site	13,500	18,000
Creditors		10,000	Materials at site		4,000
			Work in progress:		
			Certified	2,50,000	
			Uncertified	2,000	
				2,52,000	
			Less: Contractee advance	-	
				2,00,000	
				52,000	
			Less: Reserve on WIP	-9,800	42,200
			Bank		25,000
		1,32,200			1,32,200

Answer to Q. No. 10 :

Contract A/c
From 1-4-2008 to 31-3-2009

To Materials issued		3,00,000	By Plant returned (50,000-12,500)	37,500
To Labour	2,00,000		By Plant at site c/d	
(+) outstanding	20,000	2,20,000	(1,00,000-25,000)	75,000
To Plant Purchased		1,50,000	By Materials at site c/d	20,000
To Expenses	75,000		By Cost of contract to date c/d	5,97,500
(–) Prepaid	15,000	60,000		
		7,30,000		7,30,000
To Cost of Contract to date b/d		5,97,500	By WIP	
To Notional Profit c/d		2,27,500	– Work certified	8,00,000
			– Work Uncertified	25,000
		8,25,000		8,25,000
To P & L A/c		63,321	By Notional Profit b/d	2,27,500
To WIP (Reserve)		1,61,179		
		2,27,500		2,27,500

Amount transferred to P & L A/c –

$$\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

$$= 1,93,437 \times \frac{8,00,000}{17,50,000} \times \frac{6,00,000}{8,00,000}$$

Estimated Profit = Contract Price – Total estimated cost
= 17,50,000–15,56,563 = ₹ 1,93,437

Total Estimated Cost

	₹
Cost of contract to date	5,97,500
(+) **Estimated additional Cost**	
(1) Materials (20,000 + 5,50,000 – 50,000)	5,20,000
(2) Labour [(2,50,000–20,000) + 30,000]	2,60,000
(3) Expenses (1,50,000 + 15,000)	1,65,000
(4) Depreciation [$75,000 \times \frac{25}{100} \times \frac{9}{12}$]	14,063
	15,56,563

Answer to Q. No. 11 : Alcon Construction Co. Ltd. Contract Account for the year ending 31-12-2009

	₹		₹
Materials	40,000	Work in progress :	
Direct labour	55,000	Work certified (1,20,000 ×100/80)	1,50,000
Wages outstanding	200	Work uncertified	1,000
Machinery 75% of ₹ 40,000	30,000	Materials at site c/d	5,000
Expenses at site	2,000	Machinery returned :	
Profit credited to P & L A/c (55,800 × 2/3 × 80/100)	29,760	Cost ₹ 2,000	
		Less : Depreciation 200	1,800
Reserve on Work in progress (55,800-29,760)	26,040	Machinery at site 28,000	
		Less : Depreciation -2,800	25,200
	1,83,000		1,83,000

Profit and Loss Account for the year ending 31st Dec.2009

	₹		₹
Postage & Telegrams	500	Contract A/c (Profit)	29,760
Office expenses	2,000		
Rates and Taxes	3,000		
Expenses	2,500		
Depreciation (10,000 × 10/100)	1,000		
Net Profit	20,760		
	29,760		29,760

Balance Sheet as at 31-12-2009

			₹
Share Capital	₹ 1,00,000	**Fixed Assets :**	
		Land and Buildings	30,000
Profit & Loss A/c	20,760	Machinery (total) 40,000	
		Less : Depreciation (total) -4,000	36,000
Wages outstanding	200	Lorries and Vehicles	30,000
		Furniture	1,000
		Office equipment	10,000

Current Assets :			
Materials at site			5,000
Work-in-progress A/c:			
Work certified		1,50,000	
Work uncertified		1,000	
		1,51,000	
Less : Reserve on WIP		26,040	
		1,24,960	
Less : Contractee Advance		1,20,000	4,960
Bank			4,000
	1,20,960		1,20,960

Answer to Q. No. 12 : **Contract 1 Account**

Particulars		₹	*Particulars*		₹
To Materials		39,400	By Plant at site c/d		9,000
To Wages	63,250		By Materials at site c/d		2,000
Add : Payable	1,725	64,975	By WIP		
To Gen. Exp.	2,000		(a) W. Certified	1,20,000	
Add : Payable	300	2,300	(B) W. Uncertified	3,000	1,23,000
To Plant installed		10,000	By Contractee's A/c		3,325
To Notional Profit c/d		20,660	(Escalation claim)		
		1,37,335			1,37,335
To P & L A/c		10,330	By Notional Profit b/d		20,660
$(\frac{2}{3} \times 20,660 \times 75\%)$					
To WIP (Reserve)		10,330			20,660
		20,660			

Note → Computation of Escalation claim

Types of Cost	Actual Cost	Total	Upto 2.5%	Beyond 2.5%
Material(39,400-2,000)	37,400	$37400 \times \frac{10}{110} = 3400$	850	2,550
Labour	64,975	$64,975 \times \frac{15}{115} = 8,475$	1,412.5	7,062.5

Hence, the amount of escalation claim
= 20% of ₹ 2,550 + 40% of ₹ 7,062.5
= ₹ 3,325

Contract 2 Account

Particulars		₹	*Particulars*		₹
To Materials		29,000	By Plant at site c/d		7,600
To Wages	56,200		By Materials at site c/d		2,000
(+) Payable	1,800	58,000	By WIP		
To Gen. Exp.	1,400		(a) W. certified	80,000	
(+) Payable	200	1,600	(b) W. Uncertified	4,000	84,000
To Plant installed		8,000	By P & L A/c (Loss)		3,000
		96,600			96,000

Contract 3 Amount

.Particulars	₹	₹	Particulars		₹.
To Materials		10,000	By Plant at site c/d		5,850
To Wages	7,000		By Material at site c/d		1,000
(+) Payable	800	7,800	By WIP		
To Gen. Exp.	500		(a) W. Certified	18,000	
(+) Payable	100	600	(b) W. Uncertified	1,050	19,050
To Plant installed		6,000			
To Notional Profit c/d		1,500			
		25,900			25,900
To P & L A/c		NIL	By Notional profit b/d		1,500
(Less than 25% complete)					
To WIP (Reserve)		1,500			
		1,500			1,500

Answer to Q. No. 13 : **Contract No.121 Account**
From 1-4-2008 to 31-3-2009

	₹			₹
To Materials sent	4,00,000	By Machine returned		
To Labour	5,00,000	Original cost	2,60,000	
To Machine Sent	5,20,000	(-) Depreciation		
To General Admn. Cost (Note 3)	84,000	$\left[\frac{1}{2}\left(\frac{5,20,000-20,000}{5}\right)\times\frac{3}{12}\right]$	12,500	2,47,500
		By P & L A/c (Abnormal loss)		
		Material stolen		5,000
		Strike period wages		10,000
		By Machine at site c/d		
		Original cost	2,60,000	
		(-) Depreciation	50,000	
		$\frac{1}{2}\left(\frac{5,20,000-20,000}{5}\right)$		2,10,000
		By Materials at site c/d		45,000
		By Cost of contract to data c/d		9,86,500
To Cost of Contract to data b/d	9,86,500	By Work-in-Progress		
To Notional Profit c/d	1,42,333	Work certified		8,00,000
		Work uncertified (Note 1)		3,28,833
	11,28,833			11,28,833
To P & L A/c (Note 2)	45,547	By Notional Profit b/d		1,42,333
To WIP (Reserve)	96,786			
	1,42,333			1,42,333

Note :1. Computation of Cost of Work uncertified

Proposition of –

- Work Done = 60%
- Work certified = $\frac{8,00,000}{20,00,000}$ = 40%
- Work uncertified = 60%- 40% = 20%.

Cost incurred to data on 60% Work = ₹ 9,86,500

Hence, cost incurred on 20% work

$\frac{9,86,500}{60}$ = × 20 = ₹ 3,28,833

Note: 3.

Material Sent	4,00,000
Labour Cost	5,00,000
(-) Material at site	(45,000)
(-) Abnormal Items	(15,000)
Normal Material & Labour	8,40,000

10% of 8,40,000 = 84,000

Note : 2. Amount transferred to P&L A/c

As per the information given in the question, it is computed below -

$$\text{Notional Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cost Received}}{\text{Work Certified}}$$

$$= 1,42,333 \times \frac{8,00,000}{20,00,000} \times \frac{6,40,000}{8,00,000}$$

= ₹ 45,547.

Answer to Q. No. 14 :

Contract Account

	₹		₹
To Materials $\left(30,000 \times \frac{3}{6}\right)$	15,000	By Materials at site c/d	2,000
To Labour $\left(30,000 \times \frac{2}{6}\right)$	10,000	By Plant at site c/d	8,000
To Overheads $\left(30,000 \times \frac{1}{6}\right)$	5,000	By Cost of Contract to date c/d	30,000
To Plant issued $\left(\frac{8,000}{80} \times 100\right)$	10,000		
	40,000		40,000
To Cost of Contract to date b/d	30,000	By Work-in-Progress	
To Notional Profit c/d (See Note)	15,000	Work Certified $\left(\frac{4}{5} \times 50,000\right)$	40,000
		Work uncertified (balancing figure)	5,000
	45,000		45,000
To P&L A/c	8,000	By Notional Profit b/d	15,000
To WIP (Reserve)	7,000		
	15,000		15,000

Note: Computation of Notional Profit

It is given that $\frac{2}{3}$ of Profit on cost basis = ₹ 8,000 transferred to P& L A/c

i.e. $\frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}} = 8,000.$

i.e. $\frac{2}{3} \times \text{Notional Profit} \times \frac{80}{100} = 8,000.$

Hence, Notional Profit = ₹ 15,000.

Answer to Q. No. 15 : **Contract Account for the year ending 31st March 2008**

	₹		₹
Wages	6,00,000	Work-in-progress at the end:	
Special plant	2,00,000	Work certified	16,00,000
Materials	3,00,000	Work uncertified*	58,200
Overheads	1,20,000	Materials at site at the end	40,000
Notional Profit c/d	6,58,200	Plant at site at the end 2,00,000	
		Less : 10% depreciation 20,000	1,80,000
	18,72,200		18,78,200
Profit credited to P&L A/c		Notional profit b/d	6,58,200
$6,58,200 \times \frac{2}{3} \times \frac{80}{100}$	3,51,040		
Reserve on Work-in-Progress (6,58,000-3,51,0401)	30,760		
	6,58,200		6,58,200

Work uncertified has been calculated as under:

		₹
(i)	Materials (5% of ₹ 3,00,000)	1,5000
(ii)	Wages (6% of ₹ 6,00,000)	36,000
(iii)	Overheads (20% of ₹ 36,000)	7,200
	Cost of Work uncertified	58,200

Answer to Q. No. 16 : **Contract Account for the year ending 31st December 2009**

	₹		₹
Materials	50,000	Work-in-progress at the end:	
Wages paid	1,00,000	Work certified	2,00,000
Foreman's salary	12,000	Work uncertified	44,550
Depreciation	1,200	Materials at site at the end	9,000
Supervisor's salary	9,000		
Other expenses	15,000		
	1,87,200		
Notional profit c/d	66,350		
	2,53,550		2,53,550
Profit to be credited to P&L A/c	33,175	Notional profit b/d	66,350
$66,350 \times \frac{2}{3} \times (75 \div 100)$			
Reserve on Work-in-progress (66,350–33,175)	33,175		
	66,350		66,350

Computation of work uncertified:

Cost of contract to date = ₹ 1,78,200

Proportion of

- Total work done = $\frac{2}{3}$
- Work certified = $\frac{1}{2}$
- Work uncertified = $\frac{2}{3} - \frac{1}{2} = \frac{1}{6}$

Cost incurred to date on $\frac{2}{3}$ rd contract = ₹ 1,78,200

Proportionate cost related to $\frac{1}{6}$ th contract is:

$$\frac{Rs.1,78,200}{\left(\frac{2}{3}\right)} \times \frac{1}{6} = Rs.\ 44,500$$

Answer to Q. No. 17 :

M/s Everfine Constructions
Contract A/c (1-7-2000 to 31-12-2000)

Particulars	₹	*Particulars*	₹
To Building materials	8,00,000	By Material at site	50,000
To Labour charges	6,00,000	By Plant returned to stores	90,000
To Plant installed at site	4,00,000	By Plant at site	2,70,000
To General expenses	2,50,000	By Work-in-progress:	
To Notional Profit c/d	4,35,000	Work certified	20,00,000
		Work uncertified	75,000
	24,85,000		24,85,000
To Profit & Loss A/c (transfer)	2,04,000	By Notional Profit b/d	4,35,000
To Work-in-progress (Reserve)	2,31,000		
	4,35,000		4,35,000

Calculation of Estimated Profit:

			₹
Actual expenditure up to 31-12-2000			
Building Materials	(₹ 8,00,000 – ₹ 50,000)		7,50,000
Labour Charges			6,00,000
General expenses			2,50,000
Depreciation of Plant	(₹ 30,000 + ₹ 10,000)		40,000
		Total (A)	16,40,000
Estimated expenditure during 1-1-2001 to 30-9-2001			
Building Materials	(₹ 13,00,000 + ₹ 50,000)		13,50,000
Labour charges			6,00,000
General expenses			3,55,000
Depreciation of Plant & Machinery	(₹ 3,00,000 × 20/100 ×9/12)		45,000
		Total (B)	23,50,000
Total Estimated expenditure of Contract		(A) + (B)	39,90,000
Contract Price			45,00,000
Estimated Profit			5,10,000

Profit to be transferred to Profit and Loss A/c

$$\text{Estimated Profit} \times \frac{\text{Cash received}}{\text{Contract Price}}$$

$$= ₹\ 5,10,000 \times \frac{Rs.18,00,000}{Rs.45,00,000} = ₹\ 2,04,000$$

Answer to Q. No. 18 :

Swastik Company Ltd.,
Contract Account for the year ended 31-12-2001

Particulars	₹	*Particulars*		₹
To Materials	6,10,000	By Machinery returned		
To Direct labour	8,40,000	(Cost–Depreciation) (32,000-4,000)		28,000
To Expenses	20,000	By Materials on site		23,000
To Machinery	1,60,000	By Machinery on hand		
To Direct labour due	6,000	Cost	1,60,000	
		Less: Returned	32,000	
			1,28,000	
To Notional profit c/d	1,47,000	*Less :* Depreciation	16,000	1,12,000
		By Work certified		16,00,000
		By Work Uncertified		20,000
	17,83,000			17,83,000
To Profit & Loss A/c	78,400	By Notional profit b/d		1,47,000
To Work-in-progress	68,600			
	1,47,000			1,47,000

Balance Sheet as at 31-12-2001

Liabilities		₹	*Assets*		₹
Share capital			**Fixed Assets**		
35,000 shares of ₹ 10 each,			Land and Buildings		70,000
fully paid up		3,50,000	Machinery at stores	52,000	
			Add: Issued to Contract	1,60,000	2,12,000
Profit and Loss A/c:		96,900	**Current Assets**		
			Materials at site		23,000
Current Liabilities			Work-in-progress:		
Creditors		82,000	Work certified	16,00,000	
Wages accrued due		6,000	Work uncertified	20,000	
Provision for depreciation	63,000				
Add : Depreciation on				16,20,000	
→ Machinery at stores	6,500		*Less:* Reserve	68,600	
→ Machinery at site	20,000	89,500		15,51,400	
(4,000 + 16,000)			*Less:* Advance	12,80,000	
					2,71,400
			Bank		48,000
		6,24,400			6,24,400

Profit & Loss Accoaunt

To Dep. On Machine at Stores	6,500	By Balance b/d	25,000
To Balance c/d	96,900	By Contract A/c.	78,400
	1,03,400		1,03,400

Answer to Q. No. 19 :

Contract Account

Particulars	₹	*Particulars*		₹
To Materials	37,500	By Costing P & L a/c:		
To Plant	10,000	Plant	1,500	
To Wages	52,500	Materials	1,200	2,700
To Expenses	2,500	By Plant returned to stores (2,000-200)		1,800
To Notional profit c/d	10,350	By Plant (Closing)		5,850
		By Materials (Closing)		1,500
		By Work-in-Progress		
		Work- Certified	1,00,000	
		Work uncertified	1,000	1,01,000
	1,12,850			1,12,850
To Profit & Loss A/c (transfer) 10,350 x 2/3 x 80/100	5,520	By Notional profit b/d		10,350
To Work-in-progress A/c (Reserve)	4,830			
	10,350			10,350

			₹
Value of plant	Less : (1) Abnormal Loss	1,500	10,000
	(2) Returned to Stores	2,000	3,500
			6,500
Less : 10% Depreciation			650
Closing plant			5,850

Balance Sheet as on 31-12-2001

Liabilities		₹	*Assets*		₹
Share Capital		40,000	Buildings		17,000
Sundry Creditors		4,000	Cash at Bank		4,500
Profit & Loss A/c	5,520		Materials on hand		1,500
Less: Abnormal loss	2,700	2,820	Plant	5,850	
			Add: Plant in Stores	1,800	7,650
			Work-in-Progress :		
			Work certified	1,00,000	
			Work uncertified	1,000	
			Advance received	(80,000)	
			Reserve	(4,830)	16,170
		46,820			46,820

Answer to Q. No. 20 :

Contract at Mumbai

Particulars	₹	*Particulars*	₹
To Materials issued	2,20,000	By Materials returned to Stores	10,000
To Direct Labour	2,55,000	By Bank (Sale of Material)	10,000
To Plant sent to Site	2,00,000	By Material at site	18,000
To Direct Expenses	40,000	By Plant at site	1,70,000
To overheads	15,000	By Work-in-Progress	
To Profit & Loss A/c	2,000	– Work Certified	6,00,000
(Profit on sale of material)		– Work Uncertified	13,000
To Architect's Fees	7,000		
To Material transfer from Thane Contract	10,000		
To Notional Profit c/d	72,000		
	8,21,000		8,21,000
To Profit and Loss A/c (Transfer)	38,400	By Notional Profit b/d	72,000
To Work-in-Progress (Reserve)	33,600		
	72,000		72,000

Profit to be transferred to Profit and Loss A/c

$$= \text{Notional profit} \times \frac{2}{3} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$= ₹\ 72,000 \times \frac{2}{3} \times \frac{80}{100} \qquad = ₹\ 38,400$$

Contract at Thane

Particulars	₹	*Particulars*	₹
To Material issued from Stores	2,00,000	By Material returned to Stores	15,000
To Direct Labour	1,82,000	By Material at Site	16,000
To Plant installed	3,50,000	Work Certified	2,40,000
To Direct Expenses	30,000	Work Uncertified	9,000
To Office overheads	10,000	By Material transfer to Mumbai Contract	10,000
To Architect's Fees	3,000	By Plant at Site	3,15,000
		By Profit & Loss A/c (Loss)	1,70,000
	7,75,000		7,75,000

Answer to Q. No. 21 :

Contract A/c (1999)

Particulars	₹	*Particulars*	₹
To Materials sent to site	1,80,000	By Plant at site	16,000
To Wages	1,70,000	By Work-in-Progress	
To Direct expenses	7,000	Work Certified	3,50,000
To Indirect expenses	3,000	By Profit and Loss A/c (Loss)	14,000
To Plant sent to Site	20,000		
	3,80,000		3,80,000

Contract A/c (2000)

Particulars	₹	*Particulars*	₹
To Work-in-progress		By Plant at site	10,000
Work certified	3,50,000	By Work-in-progress	
To Plant at Site	16,000	Work certified	11,50,000
To Material sent to site	2,20,000	Work uncertified	20,000
To Wages	2,30,000		
To Direct expenses	25,000		
To Indirect expenses	4,000		
To Notional Profit c/d	3,35,000		
	11,80,000		11,80,000
To Profit & Loss A/c (Transfer)	2,01,000	By Notional Profit b/d	3,35,000
To Work-in-progress (Reserve)	1,34,000		
	3,35,000		3,35,000

Profit to be transferred to Profit & Loss A/c

$$= \text{Notional profit} \times \frac{2}{3} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$= ₹\ 3,35,000 \times \frac{2}{3} \times \frac{90}{100} = ₹\ 2,01,000$$

Contract A/c (2001)

Particulars		₹	Particulars	₹
To Work-in-progress			By Work-in-progress- Reserve	1,34,000
Work certified	11,50,000			
Work uncertified	20,000	11,70,000	By Plant at Site	4,000
To Plant at site		10,000	By Contractee A/c	15,00,000
To Materials sent to site		1,26,000		
To Wages		1,70,000		
To Direct expenses		9,000		
To Profit and Loss A/c		1,53,000		
		16,38,000		16,38,000

Answer to Q. No. 22 :

Contract A/c (Year 2000)

Particulars	₹	Particulars	₹
To Materials issued	3,00,000	By Material at site	5,000
To Direct Wages	2,30,000	By Plant at site	7,000
To Direct expenses	22,000	By Work-in-progress	
To Indirect expenses	6,000	Work Certified	7,50,000
To Plant purchased	14,000	Work uncertified	8,000
To Notional Profit c/d	1,98,000		
	7,70,000		7,70,000
To Profit & Loss A/c (Transfer)	1,05,600	By Notional Profit b/d	1,98,000
To Work-in-progress (Reserve)	92,400		
	1,98,000		1,98,000

Profit to be transferred to Profit and Loss A/c

$$= \text{Notional profit} \times \frac{2}{3} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$= ₹\ 1,98,000 \times \frac{2}{3} \times \frac{₹\ 6,00,000}{₹\ 7,50,000} = ₹\ 1,05,600$$

Contract A/c (Year 2001)

Particulars		₹	Particulars	₹
To Work-in-progress			By Material at site	7,000
Work certified	7,50,000		By Plant at the end	5,000
Work uncertified	8,000		By Contractee A/c	10,00,000
	7,58,000			
Less: Reserve	92,400			
		6,65,600		
To Material at site		5,000		
To Material issued		84,000		
To Plant at site		7,000		
To Plant purchased		2,000		
To Direct wages		1,05,000		
To Direct expenses		10,000		
To Indirect expenses		1,400		
To Profit & Loss A/c		1,32,000		
		10,12,000		10,12,000

Contractee A/c

	₹	2000	₹
2000		By Cash	6,00,000
To Balance c/d	6,00,000		6,00,000
	6,00,000	**2001**	
2001		By Balance b/d	6,00,000
To Contract A/c	10,00,000	By Cash	4,00,000
	10,00,000		10,00,000

Answer to Q. No. 23 :

Particulars	₹	Particulars		₹
To Materials issued	5,10,000	By Profit & Loss A/c (Lost)		
To Wages	8,10,000	Plant	30,000	
To Plant issued	1,50,000	Materials	25,000	55,000
To Other expenses	50,000	By Plant returned to stores		
To Notional profit c/d	2,70,000	Cost	20,000	
		Less: Depreciation	3,000	17,000
		By Materials in hand		23,000
		By Plant in hand		85,000
		By Work-in-progress:		
		Work certified $\left(\frac{12,80,000 \times 100}{80}\right)$	16,00,000	
		Work uncertified	10,000	16,10,000
	17,90,000			17,90,000
To Profit and Loss a/c (transfer)	1,44,000	By Notional Profit b/d		2,70,000
To Work-in-progress (reserve)	1,26,000			
	2,70,000			2,70,000

Profit transferred to P&L a/c

$$= \text{Notional profit} \times \frac{2}{3} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$= 2,70,000 \times \frac{2}{3} \times \frac{80}{100} = ₹\ 1,44,000$$

Balance Sheet as on 31-3-2001 (Extract)

Liabilities		₹	Assets		₹
Profit & Loss A/c	1,44,000		Plant	1,50,000	
(-) Abnormal Loss	55,000	89,000	*Less :* Cost	30,000	
(25,000 + 30,000)				1,20,000	
			Less: Returned	20,000	
				1,00,000	
			Less : Depreciation	15,000	85,000
			Plant returned to Stores		
			(20,000-3,000)		17,000
			Materials on hand		23,000
			Work-in-Progress:		
			Work certified	1,60,000	
			Work uncertified	10,000	
				16,10,000	
			Less: Reserve	1,26,000	
				14,84,000	
			Less: Cash received	12,80,000	2,04,000

Answer to Q. No. 24 :

Contract Account

Particulars	₹	*Particulars*	₹
To Materials	90,000	By Work-in-progress	
To Wages	1,40,000	Certified	2,50,000
To Plant	25,000	Uncertified	2,000
To Expenses	7,000	By Plant lost	5,000
		By Materials lost	4,000
		By Plant Returned (₹ 5,000 – Dep. @ 10%)	4,500
		By Materials in hand	4,000
To Notional Profit c/d	21,000	By Plant at site (₹ 15,000 – Dec. @ 10%)	13,500
	2,83,000		2,83,000
To P & L A/c $\left(21,000 \times \frac{2}{3} \times 80\%\right)$	11,200	By Notional Profit b/d	21,000
To Reserve	9,800		
	21,000		21,000

Work certified = $2,00,000 \times \frac{100}{80} = Rs.\ 2,50,000$

Balance Sheet as on 31st Dec. 2006

Liabilities	₹	*Assets*		₹
Share Capital	1,20,000	Plant in store		4,500
P & L A/c	2,200	Plant at site		13,500
Creditors	10,000	Land and building		43,000
		Materials at site		4,000
		Work in progress:		
		Certified	2,50,000	
		Uncertified	2,000	
			2,52,000	
		Less: Cash	2,00,000	
			52,000	
		Less: Reserve	9,800	42,200
		Bank		25,000
	1,32,200			1,32,200

Note:

Balance in P&L A/c is computed below

Profit from the contract		₹ 11,200
(–) Plant lost	5,000	
(–) Materials lost	4,000	₹ 9,000
		₹ 2,200

Ans. to Q. 25.

Contract Account
for the year ended on 31:03:2009

To Materials sent	35,82,600	By Materials returned	14,840
To Planning cost	3,50,000	By Materials at side c/d	85,400
To Direct wages (32,62,700+78,120)	33,40,820	By Plant at site c/d	6,16,000
To Direct Expenses(1,68,000+9,310)	1,77,310	By cost of contract to date c/d	78,87,490
To Plant installed	7,00,000		
To Establishment expenses	2,03,000		
To H.O. expenses	2,0,000		
	86,03,730		86,03,730

To Cost of Contract to date b/d	78,87,490	By WIP	
To Notional Profit c/d	4,19,510	→ Work certified	79,90,000
		→ Work uncertified	3,17,000
	83,07,000		83,07,000
To P & L A/c.	2,51,706	By Notional Profit b/d	4,19,510
$\left(\frac{2}{3}\times 4,19,510\times\frac{90}{100}\right)$			
To Reserve (WIP)	1,67,804		
	4,19,510		4,19,510

Balance Sheet (Extracts)
as on 31:03:2009

Liabilities	Amount	Assets		Amount
P & L A/c.	2,51,706	Plant at site		6,16,000
Accrued Wages	78,120	Material at site		85,400
Accrued Expenses	9,310	Material at stores		14,840
		Work-in-Progress :		
		Work Certified	79,90,000	
		Advance Received	(71,91,000)	
		Work Uncertified	3,17,000	
		Reserve	(1,67,804)	9,48,196

Ans. to Q. 26. ***Contract Account for the year ended on 30:09:2012***

To Materials sent	14,00,000	By Materials at site c/d	30,000
To wages	2,55,000	By WIP	
To Site expenses	5,0000	→ Work certified	20,00,000
To Power and Fuel	1,25,000	→ Work uncertified	NIL
To Office expenses	12,000		
To Rates and Taxes	15,000		
To Depreciation	75,000		
To Notional Profit c/d	1,43,000		
	20,30,000		20,30,000
To P&L A/c. $\left(\frac{1}{3}\times 1,43,000\times\frac{90}{100}\right)$	42,900	By Notional Profit b/d	1,43,000
To Reserve (WIP)	1,00,100		
	1,43,000		1,43,000

Ans. to Q. 27. ***Contract Account for the year ended on 31:03:2002***

To Material issued	50,00,000	By Material returned	1,00,000
To Direct wages (3,80,000+1,10,000)	39,10,000	By Materials at site c/d	18,00,000
To Plant hired	7,00,000	By Plant at site c/d	5,00,000
To Site office cost	2,70,000	By WIP	
To Direct Expenses	5,00,000	→ Work certified	1,00,00,000
To Plant Purchased	8,00,000	→ Work uncertified	NIL
To Notional Profit c/d	12,20,000		
	1,24,00,000		1,24,00,000
To P & L A/c.	12,00,000	By Notional Profit b/d	12,20,000
To Reserve (WIP)	20,000		
	12,20,000		12,20,000

$$\text{\% of Work Certified} = \frac{₹\ 1,00,00,000}{₹\ 1,08,00,000}\times 100 = 92.6\%$$

The contract is nearing completion stage. We select the following formula for transfer of profit to P & L A/c. →

$$\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

$$= ₹\ 18,00,000 \times \frac{1,00,00,000}{1,08,00,000} \times \frac{72,00,000}{1,00,00,000} = ₹\ 12,00,000$$

Ans. to Q.28.

Contract Account

Year 1		**Year 1**	
To Materials	5,25,000	By WIP	
To Wages	3,00,000	→ Work Certified $\left(\frac{11,25,000 \times 100}{90}\right)$	12,50,000
To Overheads	75,000		
To Notional profit c/d	3,50,000	→ Work uncertified	NIL
	12,50,000		12,50,000
To P&L A/c. $\frac{1}{3} \times 3,50,000 \times \frac{11,25,000}{12,50,000}$	1,05,000	By Notional Profit b/d	3,50,000
To Reserve (WIP)	2,45,000		
	3,50,000		3,50,000
Year 2		**Year 2**	
To WIP b/d		By Reserve (WIP)	2,45,000
→ Work certified	12,50,000	By Contractee's A/c.	30,00,000
→ Work uncertified	NIL		
To Materials	7,50,000		
To Wages	6,00,000		
To Overheads	1,50,000		
To P & L A/c.	4,95,000		
	32,45,000		32,45,000

Contractee's Account

		Year 1	
Year 1		By Bank A/c.	11,25,000
To Balance c/d	11,25,000		
		Year 2	
Year 2		By Balance b/d	11,25,000
To Contract A/c.	30,00,000	By Bank A/c.	18,75,000
	30,00,000		30,00,000

Ans. to Q.29.

Contract Price	₹ 25,00,000
Work Certified	₹ 24,00,000
Cash Received	₹ 21,60,000
Cost of Contract to date	₹ 19,80,000

Total Estimated Cost

Cost of Contract to date	₹ 19,80,000
(+) Estimated Addl. Cost	(+) 1,20,000
	₹ 21,00,000

Estimated Profit

Contract Price	₹ 25,00,000
(-) Estimated Addl. Cost	(-) 21,00,000
	₹ 4,00,000

Computation of amount of profit to be taken to Profit & Loss A/c. under different methods

Method 1

$$\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}}$$

$$= ₹\,4,00,000 \times \frac{₹\,24,00,000}{₹\,25,00,000} = ₹\,3,84,000$$

Method 2

$$\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

$$= ₹\,4,00,000 \times \frac{₹\,24,00,000}{₹\,25,00,000} \times \frac{₹\,21,60,000}{₹\,24,00,000} = 3,45,600$$

Method 3

$$\text{Estimated Profit} \times \frac{\text{Cost of Contract to date}}{\text{Total Estimated Cost}}$$

$$= ₹\,4,00,000 \times \frac{₹\,19,80,000}{₹\,21,00,000} = ₹\,3,77,143$$

Method 4

$$\text{Estimated Profit} \times \frac{\text{Cost of Contract to date}}{\text{Total Estimated Cost}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

$$= ₹\,4,00,000 \times \frac{₹\,19,80,000}{₹\,21,00,000} \times \frac{₹\,21,60,000}{₹\,24,00,000} = ₹\,3,39,429$$

Recommendation : On conservative basis, it is recommended to transfer the least amount (*i.e.* ₹ 3,39,429) to P & L A/c.

Ans. to Q.30. **Contract Account from 01:01:2007 to 31:12:2007**

To Materials	1,87,000	By Materials at site c/d	11,000
To Wages	2,70,000	By Cost of Contract to date c/d	5,60,000
To Plant Hire Charges	60,000		
To Establishment	54,000		
	5,71,000		5,71,000
To Cost of Contract to date b/d	5,60,000	By WIP	
To Notional Profit c/d	60,000	→ Work Certified	6,00,000
		→ Work Uncertified	20,000
	6,20,000		6,20,000
To P&L A/c.	48,000	By Notional Profit b/d	60,000
To Reserve (WIP)	12,000		

$$\% \text{ of work certified} = \frac{₹\,6,00,000}{₹\,7,00,000} \times 100 = 100 = 85.7\%$$

The contract is nearing completion stage. We select the following formula for transfer of profit to Profit and Loss A/c.

$$\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

$$= 60,000 \times \frac{6,00,000}{7,00,000} \times \frac{5,60,000}{6,00,000} = ₹\ 48,000$$

Estimated Profit = Contract Price – Total Estimated Cost.
= ₹ 7,00,000 – ₹ 6,40,000 = ₹ 60,000

Total Estimated Cost

	Cost of Contract to date	₹ 5,60,000
(+)	*Estimated Additional Cost*	
	(i) Materials Cost → (5,000 + 11,000)	16,000
	(ii) Wages →	20,000
	(iii) Plant, Hire charges →	10,000
	(iv) Establishment expenses →	2,000
		6,08,000
	Provision for contingencies $\left(6,08,000 \times \frac{5}{95}\right)$	32,000
	Total Estimated Cost	6,40,000

PROCESS COSTING

Q.1. A product passes through three processes A, B and C. The normal wastage of each process is as follows:

Process A - 3 percent. Process B - 5 percent. Process C - 8 percent.

Wastage of Process A was sold at 25 p. per unit, that of Process B at 50 p. per unit and that of Process C at ₹ 1 per unit. 10,000 units were issued to Process A in the beginning of October, 2013 at a cost of ₹ 1 per unit. The other expenses were as follows

	Process 'A'	*Process 'B'*	*Process 'C'*
	₹	₹	₹
Sundry Material	1,000	1,500	500
Labour	5,000	8,000	6,500
Direct Expenses	1,050	1,188	2,009

Actual Output was :

Process A 9,500; Process B 9,100; Process C 8,100 units.

Prepare the Process Accounts. Also give the Abnormal Loss and Abnormal Gain Account.

Q.2. A product passes through three processes - A, B and C. The details of expenses incurred on the three processes during the year 2014 were as under :

Process	*A*	*B*	*C*
Unit issued/introduced cost per unit ₹ 100	10,000		
	₹	₹	₹
Sundry Materials	10,000	15,000	5,000
Labour	30,000	80,000	65,000
Direct Expenses	6,000	18,150	27,200
Selling price per unit of output	120	165	250

Management expenses during the year were ₹ 80,000 and selling expenses were ₹ 50,000. These are not allocable to the processes.

Actual output of the three processes was :

A - 9,300 units; B - 5,400 units and C - 2,100 units. Two-thirds of the output of Process A and one-half of the output of Process B was passed on to the next process and the balance was sold. The entire output of Process C was sold.

The normal loss of the three Processes, calculated on the input of every process was :

Process A - 5%; B - 15% and C - 20%.

The loss of Process A was sold at ₹ 2 per unit, that of B at ₹ 5 per unit and of Process C at ₹ 10 per unit.

Prepare the three processes accounts and the profit and loss account.

Q.3. The product of a company passes through three different processes - A, B and C. It is ascertained from past experience that wastage in each process is incurred as under : Process A : 2%, Process B : 5%, Process C : 10%.

The wastage of each process has a scrap value. the wastage of Process A and B is sold at ₹ 1 per unit and that of process C at ₹ 4 per unit.

The company gives you the following information for the month of July, 2012 : 2,000 units of crude material were introduced in Process A at a cost of ₹ 8 per unit. Besides this the following were other expenses.

	Process 'A' ₹	*Process 'B'* ₹	*Process 'C'* ₹
Materials consumed	8,000	3,000	2,000
Direct Labour	12,000	8,000	6,000
Work expenses	2,000	1,000	3,000
	Units	*Units*	*Units*
Output	1,950	1,925	1,590
Stock: July 1	200	300	500
July 31	150	400	100
Stock valuation on July 1, per unit	19	27	36.5

Stock on 31st July, 2012 are to be valued as per FIFO method for Process A, as per LIFO method for Process B and as per Weighted Average Method for Process C.

Prepare the Process Account.

Q.4. A product passes through three processes - A, :B and C. 10,000 units at a cost of ₹ 1.10 were issued to process A. The other direct expenses were as follows :

	Process 'A' ₹	*Process 'B'* ₹	*Process 'C'* ₹
Sundry Materials	1,500	1,500	1,500
Direct Labour	4,500	8,000	6,500
Direct expenses	1,000	1,000	1,503

The scrap of process 'A' was 5% and in process 'B' 4% on input. The scrap of process 'A' was sold at ₹ 0.25 per unit and that of 'B' at ₹ 0.50 per unit and that of C at ₹ 1.00 per unit.

The overhead charges were 160% of direct labour. The final product was sold at ₹ 10 per unit fetching profit of 20% on sales. Prepare 3 processes accounts and find out the number of units of scrap in process C.

Q.5. The input to a purifying process was 16,000 kg. of basic material purchased @ ₹ 1.20 per kg. Process wages amounted to ₹ 720 and overhead was applied @ 240% of the labour cost. Indirect materials introduced into the process at a cost of ₹ 336. The actual output from the process weighed 15,000 kg. The normal yield of the process is 92%. Any difference in the weight between the input of basic material and output of purified material (product) is sold @ ₹ 0.50 per kg.

The process is operated under a licence which provides for the payment of royalty @ ₹ 0.15 per kg. of the purified material produced. Prepare the relevant accounts.

Q.6. 2,000 units have been transferred to a Process from the previous process at a cost of ₹ 68,000. Costs incurred at the process included a purchase of additional chemical materials of 50 containers of 20 kg. each at a cost of ₹ 60 per container. Other costs incurred at the process are ₹ 26,924.

Generally 5% of input units are damaged in the process. The damaged units are sold @ ₹ 20 per unit. Empty containers are sold at ₹ 6 per container, but 2% of containers get damaged and become worthless.

During the week for which the cost details are given, a total of 1,930 units were finished at the process but only 47 empty containers could be sold and the rest were damaged. 700 units produced at the process were sold outside @ ₹ 80 per unit. Rest of the process output was transferred to the next process.

Prepare Process A/c, Empty Containers A/c, Normal Loss a/c, Abnormal Gain a/c and P&L a/c.

Q.7. A product passes through two processes A and B. From the following particular relating to process A, find out equivalent production and prepare the process account.

Units introduced in process A - 2,000 valued at ₹ 5,800.

Amount spend as labour and production overhead-are ₹ 3,340 and 1,670 respectively.

Additional materials introduced during the process – ₹ 1,440.

1,400 completed units were produced in process A and transferred to process B,

Incomplete units 460.

Units actually scrapped 140 and sold at ₹ 1 per unit.

The normal process loss was estimated at 5% on input.

It was estimated that incomplete units had reached a stage in production as follows :

Materials	75% complete
Labour	50% complete
Overhead	50% complete

Q.8. From the following details prepare the Process 1 Account :

Opening work-in-progress	2,000 units	
The cost are :		₹
Material (100% complete)		7,500
Labour (60% complete)		3,000
Overhead (60% complete)		1,500
Units introduced into this process	8,000	

There are 2,000 units in process at the end and the stage of completion estimated to be :

Material	100%
Labour	50%
Overhead	50%

8,000 units are transferred to process 2

The process costs for the period are :

	₹
Material	1,00,000
Labour	78,000
Overhead	39,000

Q.9. With the help of the following information, prepare Process A Account :

Opening stock of work-in-progress
1,000 units at ₹ 10,000
Degree of completion :
Material 100%, Labour 50%, Overhead 40%.
Introducing during the process:
10,000 units at ₹ 37,800
Wages : ₹ 17,840
Overheads : ₹ 8,840.
Scrap 1,500 units
Degree of completion:
Material 100%, Labour 80%, Overhead 60%.
Closing Stock - 1,000 units.
Degree of completion :
Material 100%, Labour 60%, Overhead 50%.
Normal Loss is 11% of units introduced in the process.
Scrap Value ₹ 2 per unit.

Q.10. The following data pertains to process I of Beta Ltd. :

		₹
Opening work-in-progress	1,500 units at	15,000
Degree of completion : Material 100%, Labour and Overhead 33 1/3%		
Input of Materials	18,500 units at	52,000
Direct Labour ₹ 14,000; Overheads ₹ 28,000		
Closing work-in-progress	5,000 units	

Degree of completion: Materials 90%, Labour and Overhead 30%.
Normal Process Loss is 2,000 units
Scrap Value ₹ 2.00 per unit.
Units transferred to the next process 15,000 units.

You are required to prepare Process I Account :

Q.11. You are given the following data for preparation of Process B Account :

	₹
Opening work-in-progress 200 units	3,000
Transfer from Process A 800 units	7,650
Material added during the process	2,720
Labour	2,604
Overheads	1,276
Unit Scrapped 100	
Closing work-in-progress 300 units.	

Degree of Completion:	*Opening W.I.P.*	*Closing W.I.P.*	*Scrap*
Material	80%	70%	100%
Labour	60%	50%	70%
Overhead	50%	40%	60%

Normal Loss : 10% of gross output
Sale of scrap : ₹ 5 per unit.

Q.12. From the following information for the month of October 2012, prepare Process III Cost accounts :

Opening WIP in Process III	:	1,800 units at ₹ 27,000
Transfer from Process II	:	47,700 units at ₹ 5,36,625
Transferred to Warehouse	:	43,200 units
Closing WIP of Process III	:	4,500 units
Units scrapped	:	1,800 units
Direct material added in Process III	:	₹ 1,77,840
Direct Wages	:	₹ 87,840
Production overheads	:	₹ 43,920

Degree of completion :

	Opening Stock	Closing Stock	Scrap
Material	80%	70%	100%
Labour	60%	50%	70%
Overheads	60%	50%	70%

The normal loss in the process was 5% of gross production and scrap was sold @ ₹ 6.75 per unit.

Ans.

Process III Accounts

	Units	₹		Units	₹
To Opening WIP	1,800	27,000	By Normal loss	2,250	15,187
To Process II	47,700	5,36,625	@ ₹ 6.75		
To Direct Materials		1,77,840	By Warehouse	43,200	7,95,373
To Direct Wages		87,840	By Closing WIP	4,500	70,978
To Prod. Overheads		43,920			
To Abnormal Gain	450	8,313			
	49,950	8,81,538		49,950	8,81,538

Statement of Equivalent Production (FIFO)

Units In	Particulars	Units out	Equivalent Units					
			Material (1)		Material (2)		Labour & OH	
			%	Qty.	%	Qty.	%	Qty.
1,800	Op. WIP completed	1,800	--	--	20	360	40	720
47,700	Introduced and completed	41,400	100	41,400	100	41,400	100	41,400
	Transferred	43,200						
	Normal Loss	2,250	--	--	--	--	--	--
	Closing WIP	4,500	100	4,500	70	3,150	50	2,250
	Abnormal gain	(450)	100	(450)	100	(450)	100	(450)
		49,500		45,450		44,460		43,920
49,500								

Statement of Cost per unit

Type of Cost		Amount	E.q. units	Cost per uni
Mat. (1)	5,36,625	5,21,438	45,450	11.4728
(–) N. Loss	15,187			
		1,77,840	44,460	4
Mat (2)		87,840	43,920	2
Labour		43,920	43,920	1
Overheads				

Statement of Value of Equivalent Production

Abnormal Gain	Mat (1)	450	11.4728	5,163	
	Mat (2)	450	4	1,800	
	Lab	450	2	900	
	OH	450	1	450	8,313
Closing WIP	Mat (1)	4,500	11.4728	51,628	
	Mat (2)	3,150	4	12,600	
	Lab	2,250	2	4,500	
	OH	2,250	1	2,250	70,978
Opening WIP completed	Mat (1)	–	11.4728	–	
	Mat (2)	360	4	1,440	
	Lab	720	2	1,440	
	OH	720	1	720	3,600
Introduced and completed	Mat (1)	41,400	11.4728	4,74,973	
	Mat (2)	41,400	4	1,65,600	
	Lab	41,400	2	82,800	
	OH	41,400	1	41,400	7,64,773

Total Cost of 43,200 units transferred to Warehouse

		₹
Op. WIP, now completed (1,800 units) :		
→ Cost already incurred	27,000	
→ Cost now incurred	3,600	30,600
Introduced and completed (41,400 units)		7,64,773
		7,95,373

Note : Normal loss is computed on gross production *i.e.* op. WIP + Units received from Process II – closing WIP 1,800 + 47,700 – 4,500 = 45,000 units.

Q.13. The following information is given in respect of Process No.2 for the month of January:

Opening stock 1,500 units made up of:

Direct Material I ₹ 12,350 Direct labour ₹ 7,500

Direct Material II ₹ 13,200 Overhead ₹ 11,000

Transfer from Process No.I: 15,500 units @ ₹ 3.50 per unit

Transfer to Process No.3: 13,000 units

Direct material added

In Process No. II ₹ 30,000 Overhead incurred ₹ 70,000

Direct labour, added ₹ 60,000 Actual scrap: 1,000 units

Normal loss: 10% of gross production

Scrapped units realise ₹ 3 per unit

Closing stock: 3,000 units

Degree of completion:

Direct materials	60%
Direct labour	30%
Overhead	30%

Prepare the necessary statements together with Process No.2 account.

Q.14. The following data relate to Process Q :

(i) Opening work-in-process 4,000 units

Degree of completion :

Materials	100%	₹ 24,000
Labour	60%	₹ 14,400
Overheads	60%	₹ 7,200

(ii) Received during the month of April, 2008 from Process P 40,000 units ₹ 1,71,000

(iii) Expenses incurred in Process Q during the month

	Materials	₹ 79,000
	Labour	₹ 1,38,230
	Overheads	₹ 69,120
(iv)	Closing work-in-process	3,000 units
	Degree of completion :	
	Materials	100%
	Labour and Overheads	50%
(v)	Units scrapped	4,000 units
	Degree of completion :	
	Materials	100%
	Labour and Overheads	80%

(vi) Normal loss : 5% of current input.

(vii) Spoiled goods realised ₹ 1.50 each on sale.

(viii) Completed units are transferred to warehouse.

Prepare Process Q Account

Q.15. A Company produces a component, which passes through two processes. During the month of April, 2012, materials for 40,000 components were put into Process I of which 30,000 were completed and transferred to Process II. Those not transferred to Process II were 100% complete as to materials cost and 50% complete as to labour and overheads cost. The Process I costs incurred were as follows:

Direct Materials	₹ 15,000
Direct Wages	₹ 18,000
Factory Overheads	₹ 12,000

Of those transferred to Process II, 28,000 units were completed and transferred to finished goods stores. There was a normal loss with no salvage value of 20 units in Process II. There were 1,800 units, remained unfinished in the process with 100% complete as to materials and 25% complete as regard to wages and overheads.

The costs incurred in Process II were:

Materials	₹ 4,000
Direct Wages	₹ 3,500
Factory Overheads	₹ 4,500

Required:

(i) Prepare Statement of Equivalent Production, Cost per unit and Process I A/c.

(ii) Prepare statement of Equivalent Production, Cost per unit and Process II A/c.

Q.16. BC Limited manufactures a product 'ZX' by using the process namely RT. For the month of May, 2014, the following data are available :

Process RT

Material introduced (units)	16,000
Transfer to next process (units)	14,400
Work in process :	
At the beginning of the month (units) (4/5 completed)	4,000
At the end of the month (units) (2/3 completed)	3,000

Cost Records :

Work in process at the beginning of the month	
→ Material	₹ 30,000
→ Conversion cost	₹ 29,200
Cost during the month : Materials	₹ 1,20,000
Conversion Cost	₹ 1,60,000

Normal spoiled units are 10% of goods finished output transferred to next process. It has no realizable value for spoiled units. Prepare Process RT Account on the basis of Average Cost Method.

Q.17. RST Ltd. manufactures plastic moulded chairs. Three models of moulded chairs, all variation of the same design are Standard, Deluxe and Executive.

RST Ltd. has extrusion, form, trim and finish operations. Plastic sheets are produced by the extrusion operation. During the forming operation, the plastic sheets are moulded into chair seats and the legs are added. The standard model is sold after this operation. During the trim operation, the arms are added to the Deluxe and Executive models and the chair edges are smoothed. Only the executive model enters the finish operation, in which padding is added. All of the units produced receive the same steps within each operation. In April, 2013, the relevant information is given below :

Operation	Material	Conversion Cost
Extrusion	2,31,000	6,06,375
Form	77,000	2,97,000
Trim	26,250	1,55,250
Finish	21,000	94,500

The company is able to produce 10,500 chairs of Standard Model, 5,250 chairs of Deluxe Model and 3,500 chairs of Executive Model.

Required:

(i) For each product produced by RST Ltd. during April, 2013, determine the unit cost and the total cost.

(ii) Now consider the following information for May. All units costs in May are identical to the April unit costs calculated as above in (i). At the end of May, 1,500 units of the Deluxe model remain in work-in-progress. These units are 100% complete as to materials and 65% complete in the trim conversion operation. Determine the cost of the Deluxe model work-in-process inventory at the end of May.

Q.18. The following data have been taken from the books of a process industry :

	Process I (₹)	*Process II* (₹)
Material	12,000	---
Wages	4,800	6,000
Overheads	24,000	12,000
Closing stock	8,400	15,600
Process goods transferred from Process I to Process II at a profit of 10% on transfer price	?	
Finished products transferred from Process II to stores at a profit of 20% on transfer price		?
50% of the finished goods have been sold during the period for		30,000

You are required to prepare the process accounts and finished goods stock account and compute the amount of unrealised profit in each process, the finished goods stock and in total.

Q.19. A Ltd. produces a product, 'AXE' which passes through two processes before it is completed and transferred to the finished stock. The following data relates to October :

Particulars	*Process I* ₹	*Process II* ₹	*Finished Stock* ₹
Opening Stock	7,500	9,000	22,500
Direct Materials	15,000	15,750	
Direct Wages	11,200	11,250	
Factory Overheads	10,500	4,500	
Closing Stock	3,700	4,500	
Inter-Process Profit included in opening stock	NIL	1,500	11,250
			8,250

The output of Process I is transferred to Process II at 25% profit on the transfer price.
The output of Process II is transferred to finished stock at 20% profit on the transfer price.
The stock in process are valued at prime cost. Sales during the period are ₹ 1,40,000.
Process Cost Account and Finished Goods Accounts, showing the profit elements at each stage.

Q.20. From the following data, distribute the joint cost on the basis of market value at split off point method and physical units method :

Total joint costs		₹ 1,60,000
Product X		20,000 Units
Product Y		25,000 Units
Market Price per unit at split off point	X	₹ 50
	Y	₹ 40

Q.21. Flex Chemicals Ltd. electrolyses common salt to obtain three joint products - Caustic Soda, Chlorine and Hydrogen. During a costing period, the expenditure relating to the inputs for the common process amounted to ₹ 3,50,000. After-separation production expenses amounting to ₹ 1,60,000, ₹ 75,000 and ₹ 10,000 were incurred for Caustic Soda, Chlorine and Hydrogen respectively. The entire production was sold and ₹ 3,75,000, ₹ 2,50,000 and ₹ 60,000 were realised for Caustic Soda, Chlorine and Hydrogen respectively. The selling expenses were estimated at 5% of realisations from sale. The management expected profits @ 15%, 10% and 5% of realisations from sale of Caustic Soda, Chlorine and Hydrogen respectively.

Draw a columnar statement showing the apportionment of joint costs and the profit of each product.

Q.22. A factory produces two joint products (X and Y). The joint cost is ₹ 3,00,000 and the separate cost is mentioned below :

	X	*Y*
Materials	₹ 90,000	₹ 45,000
Labaour	42,000	30,000
Overheads	18,000	15,000
	1,50,000	90,000
Final Sales Value	4,80,000	2,40,000
Expected Profit on Selling Price	25%	20%

Selling expenses were also incurred on the products. Prepare a statement showing apportionment of joint cost. Also, prepare accounts of Products X and Y.

Q.23. A factory is engaged in the production of chemical X and in the course of its manufacture a by-product Y is produced, which after a separate process has a commercial value. For the month of March, 2012 the following are summarized cost data:

	Joint expenses	**Separate expenses**	
		X	***Y***
	₹	₹	₹
Materials	19,200	7,360	780
Labour	11,700	7,680	2,642
Overheads	3,450	1,500	544

The output of the month was 142 tonnes of X and 49 tonnes of Y. The selling price of Y averaged ₹ 280 per tonne.

Assume the profit on Y is estimated at 50% of selling price, calculate joint cost per tonne of X.

Q.24. The following details have been extracted from the costing records of an Oil Mill for the year ending on March 31, 2012 :

Purchase of 1,000 tonnes of copra	₹ 4,00,000		
	Crushing	***Refining***	***Finishing***
	₹	₹	₹
Cost of Labour	5,000	2,000	3,000
Electric Power	1,200	720	480
Sundry Materials	200	4,000	—
Repairs of Machinery	560	660	280
Steam	1,200	900	900
Factory Expenses	2,640	1,320	440
Cost of Casks			15,000

600 tonnes of crude oil were produced.
500 tonnes of oil were produced by the refining process.
496 tonnes of refined oil were finished for delivery.
Copra Sack sold for ₹ 800
350 tonnes of copra residue sold for ₹ 22,000.
Loss in weight in crushing 50 tonnes.
90 tonnes of by products obtained from Refining Process Valued at ₹ 13,500.

You are required to show the account in respect of each of the following stages of manufacturing for the purpose of arriving at the cost per tonne of each process, and the total cost per tonne of finished oil .

Q.25. Sellwell Ltd. operates a chemical process which produces four product A, B, C and D from a basic raw material. Joint cost of a month is as under :

	₹
Direct Materials consumption	17,520
Initial processing wages	16,240
Initial processing overheads	16,240
	50,000

Products	*Production Kgs.*	*Sales* ₹	*Additional Processing Costs after split off* ₹
A	16,000	1,09,600	28,800
B	200	5,600	---
C	2,000	30,000	16,000
D	360	21,000	6,600

The company presently intends to sell products B at the point of split-off without further processing. The remaining products A, C and D are to be further processed and sold. However, the management has been advised that it would be possible to sell all the four products at the split-off point without further processing and if this course was adopted, the selling price would be as under :

Product	*A*	*B*	*C*	*D*
Selling Price per kg. (₹)	4.00	28.00	8.00	40.00

The Joint Costs are to be apportioned on the basis of the sales value realisation at the point of split-off.

You are required to :

a) Prepare a statement showing the apportionment of joint costs.
b) Prepare a statement showing the product-wise and total budgeted profit or loss based on the proposal to sell product B at the split-off point and products A, C and D after further processing.
c) Prepare a statement to show the product-wise and total profit or loss if the alternative strategy to sell all the products at split-off stage was adopted.
d) Recommend any other alternative which, in your opinion, can increase the total profit further. Calculate the total profit and also the product-wise profit or loss, based on your recommendation.

A company's plant processes 1,50,000 kgs. of raw materials in a month to produce two products, viz. 'P' and 'Q'. The cost of raw material is ₹ 12 per kg. the process costs per month are :

	₹
Indirect Materials	90,000
Direct wages	1,20,000
Variable Overheads	1,00,000
Fixed Overheads	1,00,000

The loss in process is 5% of input and the output ratio of P and Q which emerge simultaneously is 1:2. The selling prices of the two products at the split-off points are : P ₹ 12 per kg. and Q ₹ 20 per kg. A proposal is available to process P further by mixing it with other purchased materials. The entire current output of the plant can be so processed further to obtain a new product 'S', the price per kg. of S is ₹ 15 and each kg. of output of S will require one kg. of input P. The cost of processing of P into S is ₹ 1,85,000 per month.

Will you recommend further processing? What will be your answer if selling price per unit of 'S' is ₹ 16 per kg.

Q.27. A company processes a raw material in its Department 1 to produce three products A, B and X at the same split-off stage. During a period 1,80,000 kgs. Of raw material were processed in Department 1 at a total cost of ₹ 12,88,000 and the resultant output of A, B and X are 18,000kgs., 10,000 kgs. and 54,000 kgs. respectively. A and B were further processed in Department 2 at a cost of ₹ 1,80,000 and ₹ 1,50,000 respectively. X was further processed in Department 3 at a cost of ₹ 1,08,000. The details of sales effected during the period were as under:

	A	*B*	*X*
Quantity sold (kgs.)	17,000	5,000	44,000
Sales Value (₹)	12,24,000	2,50,000	7,92,000

There were no opening stock. If these products were sold at split-off stage, the selling price of A, B and X would have been ₹ 50, ₹ 40 and ₹ 10 per kg. respectively.

Required:

(i) Prepare a statement showing the apportionment of joint cost to A, B and X.

(ii) Present a statement showing the cost per kg. of each product indicating joint cost, further processing cost and total cost separately.

(iii) Prepare a statement showing product wise and total profit for the period.

(iv) State with supporting calculations as to whether any or all the products should be further processed or not.

Q.28. The yield of a certain process is 80% as to the main product, 15% as to the by-product and 5% to the process loss. The material put in process (5,000 units) cost ₹ 23.75 per unit and all other charges are ₹ 14,250, of which power cost accounted for 33 1/3%. It is ascertained that power is chargeable as to the main product and by-product in the ratio of 10:9. Draw up a statement showing the cost of the by-product.

Q.29. In a chemical manufacturing company, three products A, B and C emerge at a single split off stage in department P. Product A is further processed in department Q, product B in department R, and product C in department S. There is no loss in further processing of any of the three products. The cost data for a month are as under :

Cost of raw materials introduced in department P	₹	12,68,800
Direct Wages : Department		₹
P		3,84,000
Q		96,000
R		64,000
S		36,000

Factory overheads of ₹ 4,64,000 are to be apportioned to the departments on direct wages basis.

During the month under reference, the company sold all three products after processing them further as under :

Product	*A*	*B*	*C*
Output sold kgs.	44,000	40,000	20,000
Selling Price per kg. (₹)	32	24	16

If these products were sold at the split off stage, that is, without further processing, the selling prices would have been ₹ 20, ₹ 22 and ₹ 10 each per kg. respectively for A, B and C.

Required :

(i) Prepare a statement showing the apportionment of joint costs to joint products on the basis of physical number of units.

(ii) Prepare a statement showing product-wise and total profit if products are sold without further processing.

(iii) Present a statement showing product-wise and total profit for the month under reference If the products are sold after further processing.

(iv) What processing decision should have been taken to improve the profitability of the company?

(v) Calculate the product-wise and total profit arising from your recommendation in (iv) above.

Q.30. JKL Limited produces two products – J and K together with a by-product L from a single main process (process I). Product J is sold at the point of separation for ₹ 55 per kg, whereas product K is sold for ₹ 77 per kg. after further processing into product K2. By-product L is sold without further processing for ₹ 19.25 per kg.

In process I it is generally seen that the toxic waste is 5% of input which is disposed at cost of ₹ 16.50 per kg.

The following actual data relate to the first week of the month :

Process I

Material input	40,000 kg costing ₹ 6,60,000
Direct labour	₹ 4,40,000
Variable overheads	₹ 1,76,000
Fixed overheads	₹ 2,64,000

Outputs :

Product J	19,200 kg
Product K	14,400 kg
Product L	4,000 kg
Toxic waste	2,400 kg

Process II

Input of product K	14,400 kg
Conversion cost (including fixed cost of ₹ 2,00,000)	₹ 5,00,000
Output of product K2	13,200 kg
Closing Work-in-progress (50% converted and conversion costs were incurred in accordance with the planned cost structure)	1,200 kg

Required :

(i) Prepare Process I account for the first week of the month.

(ii) Prepare the Process II account for the first week of the month.

(iii) Advise the management of JKL Limited whether or not, on purely financial grounds, it should continue to process product K into product K2.

(a) If product K could be sold at the point of separation for ₹ 47.30 per kg; and

(b) If ₹ 1,00,000 as the weekly fixed costs of Process II cannot be avoided even if further processing is not done.

Q.31. Pokemon Chocolates manufactures and distributes chocolate products. It purchases Cocoa beans and processes them into two intermediate products:

- Chocolate powder liquor base (CPLB)
- Milk-chocolate liquor base. (MCLB)

These two intermediate products become separately identifiable at a single split of point. Every 500 pounds of cocoa beans yields 20 gallons of chocolate-powder liquor base and 30 gallons of milk-chocolate liquor base.

Production and sales data for October, 2013 are:

- Cocoa beans processed 7,500 pounds
- Costs of processing Cocoa beans to split off point (including purchase of beans) = ₹ 7,12,500

	Production	*Sales*	*Selling price*
Chocolate powder	3,000 pounds	3,000 pounds	₹ 190 per pound
Milk chocolate	5,100 pounds	5,100 pounds	₹ 237.50 per pound

The October, 2013 separable costs of processing chocolate power liquor into chocolate powder are ₹ 3,02,812.50. The October 2013 separable costs of processing milk-chocolate liquor base into milk-chocolate are ₹ 6,23,437.50.

Pokemon fully processes both of its intermediate products into chocolate powder or milk-chocolate. There is an active market for these intermediate products. In October, 2013, Pokemon could have sold the chocolate powder liquor base for ₹ 997.50 a gallon and the milk-chocolate liquor base for ₹ 1,235 a gallon.

Required :

(i) Calculate how the joint cost of ₹ 7,12,500 would be allocated between the chocolate powder and milk-chocolate liquor bases under the following methods:
   (a) Sales value at split off point
   (b) Physical measure (gallons)
   (c) Estimated net realisable value, (NRV) and
   (d) Constant gross-margin percentage NRV.

(ii) What is the profitability of the chocolate powder and milk-chocolate under each of the methods in requirements (i)?

(iii) Could Pokemon have increased its operating income by a change in its decision to fully process both of its intermediate products? Show your computations.

Q.32. A company produces two joint product X and Y, from the same basic materials. The processing is completed in three departments.

Materials are mixed in department I. At the end of this process X and Y get separated. After separation X is completed in the department II and Y is finished in department III. During a period 2,00,000 kgs of raw material were processed in department I, at a total cost of ₹ 8,75,000, and the resultant 60% becomes X and 30% becomes Y and 10% normally lost in processing.

In department II 1/6 of the quantity received from department I is lost in processing. X is further processed in department II at a cost of ₹ 1,80,000.

In department III further new material added to the material received from department I and weight mixture is doubled, there is no quantity loss in the department and further processing cost (with material cost) is ₹ 1,50,000.

The details of sales during the year :

	Product X	*Product Y*
Quantity sold (kgs)	90,000	1,15,000
Sales price per kg. (₹)	10	4

There were no opening stocks. If these products sold at split-off point, the selling price of X and Y would be ₹ 8 and ₹ 4 per kg respectivelv.

Required:

(i) Prepare a statement showing the apportionment of joint cost to X and Y in proportion of sales value at split off point.

(ii) Prepare a statement showing the cost per kg of each product indicating joint cost, processing cost and total cost separately.

(iii) Prepare a statement showing the product wise profit for the year.

(iv) On the basis of profits before and after further processing of product X and Y, give your comment that products should be further processed or not.

Q.33. During the month of January, 2013, a company purchased salt for ₹ 10,00,000 and incurred conversion cost of ₹ 15,00,000 upto the split-off point, at which time two saleable products were produced, i.e., caustic Soda and Chlorine. Chlorine can be further processed into PVC. The company produced 1,200 tons of Caustic Soda and 800 tons of Chlorine. After further processing, 800 tons of Chlorine are converted into 500 tons of PVC at cost of ₹ 5,00,000. The selling price per ton are ₹ 1,250, ₹ 1,875 and ₹ 5,000 for caustic soda, chlorine and PVC respectively.

Required:

(1) Allocate joint cost of ₹ 25,00,000 between Caustic Soda and Chlorine according to–

(a) Sales value at split-off point method.

(b) Physical measurement method.

(c) Net realisable value method.

(2) Do you think the conversion of Chlorine into PVC is profitable to the company.

Q.34. A Chemical Company carries on production operation in two processes. The material first pass through Process 1, where Product 'A' is produced:

Material input quantity	2,00,000 kgs.
Opening work-in-progress quantity (Material 100% and conversion 50% complete)	40,000 kgs.
Work completed quantity	1,60,000 kgs.
Closing work-in-progress quantity (Material 100% and conversion two-third complete)	30,000 kgs.
Material input cost	₹ 75,000
Processing cost	₹ 1,02,000
Opening work-in-progress cost	
Material cost	₹ 20,000
Processing cost	₹ 12,000

Normal process loss in quantity may be assumed to be 20% of material input. It has no realizable value.

Any quantity of Product 'A' can be sold for ₹ 1.60 per kg.

Alternatively, it can be transferred to Process II for further processing and then sold as Product 'AX' for ₹ 2 per kg. Further material are added in Process II, which yield two kgs. of product 'AX' for every kg. of Product 'A' of Process I.

Of the 1,60,000 kgs. Per month of work completed in Process I, 40,000 kgs. are sold as Product 'A' and 1,20,000 kgs. are passed through Process II for sale as Product 'AX'. Process II has facilities to handle upto 1,60,000 kgs. of Product 'A' per month, if required:

The monthly costs incurred in Process II (Other than the cost of Product 'A') are :

	1,20,000 kgs. of Product 'A' input	1,60,000 kgs. of Product 'A' input
	₹	₹
Material cost	1,32,000	1,76,000
Processing costs	1,20,000	1,40,000

Required:

1. Determine, using the weighted average cost method, the cost per kg. of Product 'A' in Process I and value of both work completed and closing work-in-progress for the month just ended. Also prepare Process I Account.
2. Is it worthwhile processing 1,20,000 kgs. of Product 'A' further?
3. Calculate the minimum desirable selling price per kg. if a potential buyer could be found for additional output of Product 'AX' that could be produced with the remaining Product 'A' quantity.

Q.35. A Company produces two joint products P and Q in 70 : 30 ratio from basic raw materials in department A. The input output ratio of department A is 100 : 85. Product P can be sold at the split of stage or can be processed further at department B and sold as product AR. The input output ratio is 100 : 90 of department B. The department B is created to process product P only and to make it product AR.

The selling prices per kg. are as under :

Product P	₹ 85
Product Q	₹ 290
Product AR	₹ 115

The production will be taken up in the next month.

Raw materials 8,00,000 kgs.

Purchase price ₹ 80 per kg.

	Department A ₹ Lacs	Department B ₹ Lacs
Direct Materials	35.00	5.00
Direct Labour	30.00	9.00
Variable Overheads	45.00	18.00
Fixed Overheads	40.00	32.00
TOTAL	150.00	64.00

Selling Expenses :	₹ Lacs
Product P	24.60
Product Q	21.60
Product AR	16.80

Required :

(i) Prepare a statement showing the apportionment of joint costs on the basis of Net Sales.

(ii) State whether it is advisable to produce product AR or not.

IMPORTANT THEORETICAL QUESTIONS

Q.1. Write short notes on the following :

i) Process costing
ii) Equivalent Production
iii) Inter-Process Profits
iv) Joint Products
v) By product.

Ans. **1. *Process Costing:*** Process Costing is a costing technique adopted by those industries which satisfies the following conditions :

a) The production is continuous and the end result is the sequence of processes.
b) The product is homogeneous.
c) The finished output of one process is used as a raw material for next process until completion.
d) Output of last process is transferred to finished stock account.

Process costing is suitable in following manufacturing industries :

1) Paper, 2) Sugar, 3) Shoes, 4) Paint, 5) Food, 6) Chemicals, and 7) Rubber etc.

2. *Equivalent Production :* In process industries, production is on continuous basis and at the end of accounting period, there is some production which is semi finished or incomplete. Such incomplete production is known as work-in-progress. Such work-in-progress is valued in terms of equivalent production. Equivalent production is calculated in terms of equivalent units with the help of following formula :

Equivalent Units = (Units of WIP) (Percentage of work completed)

Suppose, closing work in progress is 200 units, which is 75% complete in respect of material, labour and overheads, it is equivalent to 200 units X 75% = 150 completed units.

3. *Inter-Process Profit :* Sometimes, the output from one process is transferred to another process not at cost but at an inflated amount. This transfer price can either be the current wholesale market price or cost plus an agreed percentage. The result is that there is a profit to the transferor process. There are following two objectives of inter process profits:

i) To show whether cost of production competes with the market prices.
ii) To make each process stand on its own efficiency and economics, i.e. the transferee process do not receive the benefits of economics effects in previous process.

4. *Joint Products:* When two or more products of almost equal importance are simultaneously produced from the same raw material, such products are termed as joint products. For example, in case of oil refinery following joint products emerge :

I) Kerosene
II) Gasoline
III) Fuel, Oil, etc.

Joint products has the following features :

a) They are produced from same raw material.
b) They are of almost equal value of importance.
c) They are produced simultaneously.
d) They may require further process after split-off point.

5. *By-Products :* These are products of comparatively small value and are produced jointly with the main products for example, in case of Sugar Industry, sugar is the main product, whereas the molasses are the by-product.

Q.2. Distinguish between Job Costing and Process Costing.

Ans.: 1. In Job Costing, production is against specific orders, whereas in Process Costing, homogenous goods are produced in sequential activities.

2. In Job Costing, cost are collected and accumulated for each job separately. In Process Costing, costs are collected and accumulated process-wise.

3. In Job Costing, cost computation is done after completion of job. In Process Costing, cost computation is done at the end of each period.

4. In Job Costing, there are usually no transfers from one job to another unless there is some surplus work. In Process Costing, the product moves from one process to another.

Q.3. How will you deal with by-products in costing :

1. Where they are of small total value.
2. Where they are of consideration total value.
3. Where they require further processing.

Ans.: ***a) Where By-Products are of Small Sales Value :*** In such case, the net income realised by the sale of by-product is to be credited to the process account in which the by-product has arisen.

b) Where they are of Considerable Total Value : In such case, the joint cost of by-product should be apportioned and transferred from main product account to the by-product A/c. Any further cost is also debited to by-product A/c. The By-product A/c is credited with the sales value and the balance of account represents profit or loss of by-product which is to be transferred to costing profit and loss A/c.

c) Where they require further Processing : In such case, the net realisable value of by-products is calculated with the help of Reverse cost method. If this amount is small or negligible, it may be treated as per the method (a) discussed above. On the contrary, if this amount is of considerable amount, it is treated as per method (b) discussed above.

Q.4. Define normal loss, abnormal loss and abnormal gain ? Explain their accounting treatment.

Ans.: ***Normal Loss :*** Such loss is unavoidable and estimated in advance on the basis of past experience and technical specifications. If such loss fetches no value, it is recorded at nil amount at the credit side of process account. If such loss fetches some value, the value is credited to the process account.

Abnormal Loss : Any loss caused by unexpected or abnormal conditions is considered as abnormal loss. It is credited to the process account at the amount calculated as follows :

(Units of Abnormal Loss (Cost per Unit)

$$\text{Where Cost per Unit} = \frac{\text{Normal Cost of Normal Output}}{\text{Normal Output}}$$

Abnormal Gain : If actual process loss is than the estimated normal loss, the difference is the abnormal gain, it is debited to process account at the amount calculated as follows :

(Units of Abnormal Gain) (Cost per unit)

Q.5. Distinguish between Joint Products and By-products.

Ans.: There is no definite criterion for distinguishing between joint products and by-products. Generally, the difference between joint product is based on their relative commercial value. The joint products are almost of same value and importance. However, if there is wide difference between the commercial values of product combindly product, the product with relatively less commercial value is by-product and the product with higher commercial value is termed as main-product.

There are some other factors which make a distinction between joint products and by-products, e.g. objective of manufacture, policy of management, profitability of products, accounting treatment, etc.

The distinction between joint products and by-products is not academic, it is all based on practical circumstances and other relevant factors.

Q.6. Distinguish between joint products and co-products.

Ans.: Often joint products and co-products are considered as synonymous. However, there are some points of difference between the two terms. In case of co-products two or more products are produced at same time, but with different inputs. But, for joint products, the same input and processing is used.

One important point is that the change in production of one co-product may not necessarily lead to a change in production of other product. However, in case of joint products, if any change has occurred in joint process or input, the output is bound to have some adverse or favourable effect.

Q.7. Where the objectives of accounting for joint products and by-products ?

Ans.:
1. Cost control is made feasible.
2. Reliable product cost information is collected.
3. Determination of profitability of each product.
4. Helps in setting selling prices of products.
5. Helps in valuation of stock and work-in-progress.

Q.8. What are the limitations of distributing total joint cost among various joint products ?

Ans.: Analysis of joint cost over joint products suffers from the following limitations:

1) Apportionment of joint cost over various products is mainly arbitrary and the true costs of various individual products cannot be known.
2) Approtionment of joint cost is based on certain assumptions which may be unrealistic or even misleading.
3) Arbitrary apportionment of joint costs makes inter-firm comparison difficult.
4) There is no clear cut distinction between joint products and by-products.

REVISIONARY PROBLEMS

Q.1. A product is finally obtained after it passes through three distinct processes. The following information is available from the cost records.

	Process I	*Process II*	*Process III*	*Total*
	(₹)	*(₹)*	*(₹)*	*(₹)*
Materials	2,600	2,000	1,025	5,625
Direct Wages	2,250	3,680	1,400	7,330
Production overheads	–	–	–	7,330

500 units @ ₹ 4 per unit were introduced in process I. Production overheads are absorbed as a percentage of direct wages.

The actual output and normal loss of the respective process are given below:

	Output (units	**Normal loss as a Percentage of input**	**Value of scrap (per unit)**
Process I	450	10%	₹ 2
Process II	340	20%	₹ 4
Process III	270	25%	₹ 5

Prepare the process accounts and the abnormal gain/loss accounts.

[Ans.: Cost per unit: Process I ₹ 20; Process II ₹ 50; Process III ₹ 80].

Q.2. A product manufactured by the Standard Chemicals Ltd. passes through three process I, II and III. The following costs have been incurred for the month of September 2012:

	Process I	Process II	Process III
	(₹)	(₹)	(₹)
Material consumed	40,000	7,500	5,000
Direct wages	22,500	10,000	10,000
Direct expenses	20,500	2,250	2,505
TOTAL	83,000	19,750	17,505
	Units	*Units*	*Units*
Output	3,900	3,850	3,200
Finished process stock:			
(i) 01:09:2012	600	550	800
(ii) 30:09:2012	500	800	Nil
Stock valuation on 01:09:2012 (₹ per unit)	24.50	31.00	37.00
Percentage of wastage	2	5	10
Net realisable value of Wastage per unit (₹)	13.50	16.25	21.00

Four thousand units of raw materials were introduced in process No. I at a cost of rupees twenty thousand.

Stocks are valued and transferred to subsequent process at weighted average cost. The percentage of wastage is computed on the number of units entering the process concerned.

Prepare (I) Process A/cs; (ii) Process Stock A/cs; (iii) Normal wastage A/cs; (iv) Abnormal wastage/effective A/cs.

[Ans.: Cost per unit – Process I ₹26; Process II ₹31.50; Process III ₹38.

Weighted average cost per unit – Process I ₹ 25.80; Process II ₹ 31.4375; Process III ₹37.80]

Q.3. At the end of Process A during the week ending July 31st 2012, the number of units produced was 850 excluding 50 abnormally damaged units. The damaged units realised ₹ 3 per unit as scrap. A normal wastage of 10 per cent occurs during the process. The wastage realised ₹ 2 per unit.

A unit of raw material costs ₹ 4. The other expenses for the week were :
Wages ₹ 500; Power ₹ 200 and General expenses ₹ 450.

40% of the output is sold as to show a profit of $16\frac{2}{3}$% on the selling price, the rest of the output is transferred to Process B. transferred to Process B. Prepare Process A Account, Normal Loss Account and Abnormal Loss Account.

[Ans.: Cost per unit = ₹5.50; Selling price per unit = ₹6.60].

Q.4. Karnataka Products Ltd. manufactures a chemical in three process. The details of these three process are as follows :

	Process I	Process II	Process III
Transfer to next process	66 2/3%	60%	--
Transfer to warehouse	33 1/3%	40%	100%

In each process out of the total weight put in, 4% is normally wasted and 6% is normally scrapped. The scrap is sold at ₹ 6, ₹ 10 and ₹ 12 per ton in I, II and III processes respectively. For the month of October, 2013, the details of expenditure are :

Process I	2,800 tons of materials at	₹ 40 per ton.
Process II	320 tons of materials at	₹ 64 per ton.
Process III	2,520 tons of materials at	₹ 28 per ton.

Production labour cost is : Process I ₹ 20,608; Process II ₹ 12,560; Process III ₹ 11,580.

For the month of October 2013, the office and administration expenses worked out at ₹ 15,567 which is to be charged equally for all the processes.

Prepare Process Cost Accounts. Calculate the cost per ton in each process.

[Ans.: Cost per ton = ₹54.28 (Process I), ₹71.23 (Process II) and ₹49.9 (Process III)

Q.5. The finished product of a factory has to pass through three processes A, B and C. The normal wastage of each process is 2% in A, 5% in B and 10% in C. The percentage of waste is computed on the number of units entering each process.

The scrap values of wastage of processes A, B and C are ₹ 10, ₹ 40 and ₹ 20 per 100 units respectively.

The output of each process is transferred to the next process and the finished products are transferred from Process C into stock. The following further information is obtained :

	Process A	***Process B***	***Process C***
Materials consumed	₹ 12,000	₹ 4,000	₹ 4,000
Direct Labour	8,000	6,000	6,000
Manufacturing Expenses	2,000	4,000	2,000

20,000 units were put into Process A at a cost of ₹ 16,000. The output of each process has been : A 19,600 units; B : 18,400 units and C : 16,700 units.

There was no stock of work-in progress in any process.

Prepare the relevant accounts.

[Ans.: *Process A*

Amount transferred to Process B = ₹ 37,960

Process B

Amount transferred to Process C = ₹ 50,959

Amount of Abnormal Loss = ₹ 609

Process C

Amount transferred to F. Goods = ₹ 63,120

Amount of abnormal gain = ₹ 529

Q.6. The finished product of a manufacturing company passes through three processes, viz., I, II and III. The normal wastage in each process is 5%, 7% and 10% for the processes I, II and III respectively (calculated with reference to the number of units fed into each process).The scrap generated out of wastage has a sale value of 70 paise per unit, 80 paise per unit and Rupee 1 per unit in the processes I, II and III respectively. The output of each process is transferred to the next process and the finished output emerges from the Process III and transferred to stock. There was no stock of work-in-progress in any process in a particular month. The details of cost data for the month are given below :

	Processes		
	I	**II**	**III**
Materials used (₹)	1,20,000	40,000	40,000
Direct Labour Cost (₹)	80,000	60,000	60,000
Production Expenses (₹)	40,000	40,000	28,000
Output in Units (actuals)	38,000	34,600	32,000

Process I was fed with 40,000 units of raw input at cost of ₹ 3,20,000

[Ans.: Cost per unit:

Process A ₹14.70; Process B ₹19.7078 and Process C ₹25.8969].

Q.7. During January, 1,000 units costing ₹ 6,000 were introduced in process 1. There was no work-in-progress at the beginning. At the end of January, 600 units were transferred to process II; 250 units were incomplete and 150 units had been scrapped, the normal process loss was 10% of input. It was estimated that incomplete units had reached the following stages:

Material	80%
Labour	60%
Overhead	60%
Direct materials introduced	₹ 2,700
Direct wages	₹ 3,200
Production overhead	₹ 1,600

Value of scrap is ₹ 2 each. The units scrapped have passed through the processes and are 100% complete as regard material, labour and overhead.

You are required to prepare:

(a) Statement of equivalent production.
(b) Statement of cost for each element. *[Ans.: ₹ 10, ₹ 4 and ₹ 2]*
(c) Statement of apportionment of process cost.
(d) Process I account *[Ans.: Process A/c. total ₹ 13,500]*
(e) Abnormal loss account.

Q.8. Apex Company has a single process.

Work-in-process (opening)	8,000 units
Cost: Material	₹ 29,600
Wages	₹ 6,600
Overhead	₹ 5,800

During the period the input was 32,000 units.
Additional costs were: material ₹ 1,12,400; wages ₹ 33,400; overhead ₹ 30,200.

At the end of the year 28,000 units were fully processed and 12,000 units were in process. The value of the closing stock includes the full cost of materials and only one-third of the cost of wages and overheads. Tabulate the production and cost figures to give quantities, unit values, total value of completed output and detailed values for the closing work-in-process.

[Ans.: Cost per unit – Material ₹ 3.55; Wages ₹ 1.25 and overheads ₹ 1.125].

Q.9. JB Limited produces four joint products A, B, C and D, all of which emerge from the processing of one raw material. The following are the relevant data:

Production for the period:

Joint product	*Number of units*	*Selling price per unit*
A	500	18.00
B	900	8.00
C	400	4.00
D	200	11.00

The Company budgets for a profit of 10% of sales value. The other estimated costs are:

	₹
Carriage	1,000
Direct wages	3,000
Manufacturing overhead	2,000
Administration overhead	10% of sales value

You are required to:

(a) Calculate the maximum price that may be paid for the raw material.
(b) Prepare a comprehensive cost statement for each of the products allocating the materials and other costs based upon:
(i) number of units (ii) sales value.

[Ans.: Amount of purchases = ₹ 10,000].