

10

Job, Contract and Batch Costing

Learning Objectives

After reading this chapter, you should be able to:

1. describe job costing — nature and its advantages and disadvantages;
2. explain the nature of job cost sheet and contract costing as well;
3. explain sub-contract, work-in-progress in contract costing, cost-plus contract and batch costing and economic batch quantity;
4. describe how costs are recorded on jobs and on contract as well; and
5. explain the methods of determining profit on incomplete contracts and the procedure of ascertaining value and profit of contract.

NATURE OF JOB COSTING

Job costing is a costing method applied to determine the cost of specific jobs or lots of production generally manufactured according to customers' specifications. The main feature of the job order costing system is that no two orders are necessarily alike and all orders do not pass through the same manufacturing process. Generally, the job order system is used by manufacturing concerns where an order is produced to a customer's specifications, such as building, contracting, machine tool manufacturing, furniture, foundries, job printing and general engineering. A job may be a product, unit, batch, sales order, project, contract, service, specific programme or any other cost objective that is clearly distinguishable and unique in terms of materials and other services used.

Advantages

Job costing has the following advantages:

1. More accurate costing is possible because all costs are compiled and specifically identified with a specific order or product.
2. It is simple as the recording of direct materials, and direct labour hours is done by product or job.
3. Job cost sheets can be used to control efficiency and estimate future work.
4. It provides a basis for comparing one job cost to another or for comparing a job cost sheet to a cost estimate.

Disadvantages

Job costing has the following disadvantages:

1. It requires detailed record-keeping for different jobs.
2. The record-keeping for different jobs may prove complicated.
3. A job may be charged for inefficiencies (downtime) although it has not caused it.

JOB COST SHEET AND JOB LEDGER

The focal point of a job order cost system is the cost sheet on which charges for direct materials, direct labour, and indirect manufacturing costs can be accumulated as work on a job order progresses. It is in summary form and records the job number and other specifications and descriptive information as given in the production order. The design of the cost sheet and the number of columns to be used must be determined in terms of departmental and manufacturing characteristics of the business operations. Basically, the recorded costs are grouped under three major headings: material costs, labour costs and applied manufacturing overhead costs. Figure 10.1 presents a specimen of a job cost sheet. When a production order is started in process, a cost sheet identified by a job number is set up in the accounting department.

ABC Company			
Job Order Cost Sheet			
Customer Name	Date	Job Order No.	
Line item per Job	Selling price	Total cost	
Cost per unit			
Department 1	Department 2	Department 3	
Materials:			
Date(s)			
Requisition no.			
Amount			
Labour:			
Date(s)			
Job time card no.			
Amount			
Overhead:			
Rate/Basis			
Amount absorbed			
Cost summary:	Dept. 1	Dept. 2	Dept. 3
Material			
Labour			
Overhead			
Total			
Units completed		Date Completed	

Fig. 10.1 Specimen of a job sheet

When the job is completed and a unit

RECORDING C**Materials Costs**

Materials part of the product become used and they are allocated to the cost sheet.

Labour Costs

Direct labour costs are incurred when a worker begins a job and finished, the stop and then compute

Direct Expense

Generally speaking, direct expenses are incurred. The amount depends on the number of the job.

Overhead

Overhead costs are calculated in rate calculated in

RECORDING C

When a job is finished, the cost sheet is transferred to the proper account. When no unit comes work-in-progress from the work-in-progress, it is carried forward to the next job.

Example 10.1

The following table shows the records of a

When the job order is finished/completed, the cost summary at the bottom of the form is completed and a unit cost for the job order is computed.

Sed it.

RECORDING COSTS ON JOBS

Materials Costs

Materials used in manufacturing and/or completing jobs are known as direct materials which become part of the finished product. Direct materials are directly charged to the job on which they are used and indirect materials or factory supplies are part of manufacturing overhead and are allocated to the various jobs.

Labour Costs

Direct labour costs can be identified with specific jobs with the help of "job time tickets". When a worker begins work on an order, the starting time is noted on the ticket; when the job order is finished, the stopping time is written in and the time spent on a job is noted. Earnings (wages) are then computed using the employee's hourly rate.

Direct Expenses

Generally speaking, direct expenses are directly charged to individual jobs for which they are incurred. The invoices (of direct expenses) as documentary evidence can be marked with the number of the jobs to which the cost is to be allocated.

Overhead

Overhead costs are usually charged to work-in-progress by means of a predetermined absorption rate calculated in advance of production. This is derived on the basis of budgeted figures.

RECORDING COMPLETED JOBS

When a job is finished, its cost is determined by totalling prime costs and absorbed overhead. The cost sheet is then marked "completed" and removed from the job ledger. An entry is made to the proper account in the finished goods ledger.

When no unit on a job order is completed, the total cost incurred on the job order so far becomes work-in-progress. Under job costing, the value of closing work-in-progress is obtained from the work-in-progress account. The work-in-progress at the end of an accounting period is carried forward to the subsequent accounting period as opening stock. The expenditure incurred on the job in this subsequent period is added to the opening stock. The expenditure incurred

Example 10.1

The following information for the year ended 31st December, 2000 is obtained from the books and records of a factory:

	Completed Jobs	W.I.P.
	₹	₹
Raw materials supplied from stores	88,000	32,000
Wages	1,00,000	40,000
Chargeable expenses	10,000	4,000
Materials returned to stores	1,000	—

Factory overheads are 80% of wages. Office overheads are 25% of factory cost and selling distribution overheads are 10% of cost of production.

The complete jobs realised ₹4,10,000. Write up:

- Work-in-progress Ledger Control Account
- Completed Job Ledger Control Account; and
- Cost of Sales Account

(B. Com. (Hons), Delhi, 2001)

Solution

Consolidated Work-in-Progress A/c		
Dr:	₹	Cr:
To raw material consumed	32,000	
To Wages	40,000	
To Chargeable expenses	4,000	
To Factory overheads (80% of wages)	32,000	
Factory cost	1,08,000	
To Administrative overheads (25% of ₹1,08,000)	27,000	
To	1,35,000	1,35,000

Note: Selling and distribution overhead has not been charged in Work-in-progress A/c.

Consolidated Completed Job A/c

Dr:	₹	Cr:
To Raw material consumed Less: Returned to store	88,000	87,000
		By Customer's A/c (Amt. of jobs completed)
		4,10,000
		(Contd.)

Dr.	Cr.
To Wages	₹ 1,00,000
To Chargeable Expenses	10,000
To Factory overheads (80% of ₹1,00,00 of wages)	80,000
Factory Cost	2,77,000
To Admin. overheads (25% of ₹2,77,000)	69,250
Cost of production	3,46,250
To Selling and Distribution overhead	34,625
To N.P. Transferred to P and L A/c	29,125
	<u>4,10,000</u>

Cost of Sales Account		
Dr.	Cr.	
To Materials consumed	87,000	By Balance c/d
To Wages	1,00,000	
To Direct charges	10,000	
To Factory overhead (80% of wages)	80,000	
Factory cost	2,77,000	
To Admin. overheads (25% of ₹2,77,000)	69,250	
To Selling and Distribution	3,46,250	
10% of ₹3,46,250	34,625	
Cost of Sales	3,80,875	

Example 10.2

Xavier company manufactures many products. Each product passes through two production departments, which have the following cost structures:

	<u>Department A</u>	<u>Department B</u>
Normal monthly volume (based for overhead rate)	5,000 direct labour hours	10,000 pounds of materials
Monthly fixed costs at normal volume	₹10,000	₹40,000
Monthly variable costs at normal volume	15,000	20,000

Two job orders that went through the factory last month had the following results:

<i>Job 1 (Product X)</i>		<i>Job 2 (Product Y)</i>	
<i>Quantity</i>	<i>Cost</i> (₹)	<i>Quantity</i>	<i>Cost</i> (₹)

Direct inputs:

Direct materials	480 lbs	2,400	1,500 lbs	4,800
Direct labour:				
Department A	180 hrs	1,620	100 hrs	900
Department B	60 hrs	420	40 hrs	280

Output

600 units

1,000 units

- Calculate the unit cost of each of these jobs on a full costing basis.
- Recalculate unit costs on a variable costing basis.
- Why are the relative variable costs of these two products so different from their relative full costs?

Solution

(a) Full-costing overhead rates:

Department A: ₹25,000/5,000 = ₹5 a direct labour-hour

Department B: ₹60,000/10,000 = ₹6 a pound

Job order costs:

Job 1

₹2,400

Job 2

₹4,800

Direct materials

Direct labour:

Department A

Department B

Overhead: Department A at ₹5

Department B at ₹6

Total

Unit cost Job 1, ₹8220/600 units,

Job 2, ₹15480/1000 units

(b) Variable costing overhead rates:

Department A: ₹15,000/5,000 = ₹3 a direct labour-hour

Department B: ₹20,000/10,000 = ₹2 a pound

Job order costs:

	<i>Job 1</i>	<i>Job 2</i>
Direct materials	₹2,400	₹4,800
Direct labour:		
Department A	1,620	900
Department B	420	280
Overhead:		
Department A at ₹3	540	300
Department B at ₹2	960	3,000
	<u>₹5,940</u>	<u>₹9,280</u>
Unit cost	₹9.90	₹9.28

(v) Variable unit cost of job 2 is less than that of job 1; full cost was greater for job 2 than for job 1. The main reason is that job 2 used much more of department B's capacity than job 1, and department B has a much higher proportion of fixed costs than department A. Total profit is thus much more sensitive to variations in sales of product Y (job 2) than to variations in sales of product X.

Example 10.3

An advertising agency has received an enquiry for submission of quotation. Bill of materials prepared by the production department for the job states the following requirement of materials:

Paper 10 reams @ ₹1,800 per ream
Ink and other printing material ₹5,000

Binding material and other consumables ₹3,000

Some photography is required for the job. The agency does not have a photographer as an employee. It decides to hire one by paying ₹10,000 to him. Estimated job card prepared by production department specifies that service of following employees will be required for this job: (1) Artist (₹12,000 per month) 80 hours; (2) Copywriter (₹10,000 per month) 75 hours; (3) Client servicing (₹9,000 per month) 30 hours.

The primary packing material will be required to the tune of ₹4,000. Production overheads 40% of direct cost while the selling and distribution overheads are likely to be 2.5% on production cost. The agency expected a profit of 20% on the quoted price. The agency works 25 days in a month and 6 hours a day.

You are required to determine the price to be quoted for the job.

Solution**Quotation for Printing Job**

	<i>Amount (₹)</i>	<i>Amount (₹)</i>
Direct material required:		
Paper (1800 × 10)	18,000	
Ink and others printing material	5,000	
Binding material and consumables	3,000	
Primary packing materials	4,000	
	<u>30,000</u>	

(Contd.)

	Amount (₹)	Amount (₹)
Direct Labour spent:		
Artist $(12000 \times 80) / (25 \times 6)$	6,400	
Copywriter $(10000 \times 75) / (25 \times 6)$	5,000	
Client Servicing $(9000 \times 30) / (25 \times 6)$	1,800	
Photographer's charge		13,200
Prime Cost		
Factory overhead applied @ 40% on direct cost		53,200
Production Cost		21,280
Selling & Distribution overhead applied @ 25% on production cost		74,480
Total Cost		18,620
Profit (20% on price i.e. 25% on cost)		93,100
Price to be quoted		23,275
		1,16,375

CONTRACT COSTING

Contract costing, sometimes known as terminal costing, follows the same principles as job costing and is used by such concerns as firms of builders and public works contractors who undertake work on a contract basis.

Following are the special features of contract costing:

1. The contractor begins work on a small number of large contracts in the course of a year.
2. The contracts are completed away from the contractor's premises.
3. The contracts may continue over more than one accounting period.
4. Materials are purchased and delivered direct to the contract site and/or are drawn from the central stores.
5. The payroll is prepared at either the site or at a central administrative office.
6. Sub-contractors may be employed, for example, ventilation engineers, lift manufacturers, flooring specialists, etc.
7. Plant and equipment may be purchased, or hired for the duration of the contract from another business or from a central plant department.
8. Payment by the customer for various stages of the contract is made only on receipt of architect's certificate for the completed stage. A reduction called retention money is withheld by the customer until a specific period of time, agreed in the original contract, has passed.
9. The contract price is normally estimated in advance of the work. Additional work found necessary may be charged on a cost-plus basis. In addition, clauses may be inserted to allow the contractor to pass on to the customer additional costs incurred as a result of increase in material, labour and other costs.

RECORDING COSTS ON CONTRACT

Under contract costing, a contract is basically the cost unit and for the purpose of control, it can be regarded as a cost centre. Under contract costing only allocation is required directly to the contract. Overhead costs are normally incurred at the head office and are sometimes known only as storage costs. Such overhead costs tend to be of a small figure and are often absorbed on some arbitrary basis such as a percentage on prime cost.

A separate account, the contract account, is opened for each individual contract for the purpose of determining the profit or loss on each contract. In the contract account the following costs are recorded:

Materials

Materials required for a specific contract are debited to the contract account. Materials returned under the materials returned note are credited with the contract.

Materials transferred from one contract to another are recorded in material transfer notes; the contract receiving the material is debited and the contract giving the material is credited. Materials not required for current use are sometimes sold at the site, and the amount received from sale of materials is credited to the contract account, and any profit or loss, being the difference between the cost and sale value, is transferred to the profit and loss account. This also applies not only to materials, but also to sale of plant, machinery, tools, etc. At the end of the accounting period the value of materials remaining unutilised on site is carried forward as a charge against the next period. In the accounting year, the amount will be debited to the materials or stores at site account and credited to the contract account. Materials stolen or destroyed by fire are transferred to the profit and loss account and also shown on the credit side of the contract account.

The customer or contractee may supply certain materials from own stock to be utilised in construction work. Such materials should not be debited (charged) to the contract account; a separate memorandum record outside the account will be sufficient. Such materials do not affect the contract price.

Wages

Wages of all workers engaged on a particular contract are allocated direct to that contract, regardless of work they perform. Where workers move from one contract to another, time-sheets must be maintained and wages may be distributed on the basis of time spent under each contract. The wages of the head office and central stores are considered as overhead and are charged to contracts on an equitable basis. Wages accrued or outstanding at the end of the period should appear on the debit side of contract.

Expenses

All expenses other than material and wages are charged to individual contracts as and when they are incurred. Examples of such expenses are hire charge of plants obtained from outside, architects' and consultants' fees, electricity, insurance, etc.

Second Method

The amount of work certified account. The work certified account. When the contract is completed, the balance in the next year, the receivable sheet.

If or use of plant and machinery in a particular contract, the depreciation may be charged in any one of the following ways:

- When the plant has been specially purchased for a particular contract and will be exhausted at site, the total cost of the plant is debited to the contract. It may be sold at site and contract is completed or the plant is no longer required, the contract is credited with the depreciated value of the plant. If it is not sold, the contract account stands debited with the amount credited with the sale proceeds. Thus, the contract account is unnecessarily inflated (revalued amount) value. Thus, the contract account side is unnecessarily inflated (revalued amount) value. Thus, the contract account is to be very high. In order of depreciation. This method has the drawback that the debit side is to be very high. In order with the plant value, and the cost of contract at first sight appears to be very high. In order to overcome this problem, the difference between the original cost of commencement and the depreciated value at the end of the period is obtained and charged to the contract account concerned as plant depreciation.
- When the plant is sent to the contract site only for a short period, it is usual to charge the contract for the use on a daily or hourly basis. Depreciation is charged at an hourly rate for the hours the plant has worked. If the plant is taken on hire, only the hire charges are debited to the contract and not depreciation.

Sub-Contract

When a sub-contractor is engaged for a special work connected with the main contract, the work performed by the sub-contractor forms a direct charge to the main contract. The payments made to sub-contractors are charged in totals to the concerned contract account as direct expense and no detailed record, or break-up of the sub-contract amount is necessary for cost purposes. Materials issued to the sub-contractor, free of charge, should be charged to the contract account. Heavy tools and equipment may be supplied to sub-contractors on a rental basis. The depreciation on these equipments should be charged to the contract account and the rental received is credited to it or shown as a deduction from the sub-contractor's bill.

VALUE AND PROFIT OF CONTRACT

As the contract work proceeds, the surveyor appointed by the contractor issues certificates to the effect that so much portion has been completed. The contractor will get money according to this certificate and a certain portion thereof shall be retained by the contractor. The money so retained is called retention money. For example, if a certificate has been issued for ₹2,00,000 and 70% has been paid, the following entries will be made:

First Method

1. Contractor's account	2,00,000	2,00,000
To contract A/c (being value of the work certified)		
2. Bank A/c Dr To contractor's A/c (being amount of cash received)	1,40,000	1,40,000

WORK-IN-PROGRESS

Cost of Work Certified	Cost of work certified
Less: Cost of work uncertified	
Materials	
Plant at site	
= Cost of work certified	

Work-in-progress account. The work-in-progress account. When the work certified account is debited, the balance in the next year, the receivable sheet.

- To Contract
(being work certified)
- Bank A/c Dr
To Contra
(being amount received)
- Asset Side
Balance:

Second Method

Amount of work certified will be debited to the work-in-progress account and credited to the contract account. The work-in-progress account is shown as an asset in the balance sheet after deducting the amount received from the contractee. Until the contract is completed, the amount received from the contractee is advance payment and is deducted from work-in-progress in the balance sheet. When the contract is completed, the contractee account is debited with the contract price. In the next year, the work-in-progress account is transferred to the debit side of the contract balance sheet. On completion of the contract, the contractee's personal account is debited and the account credited. Taking the above example, the journal entries will be as follows:

Work-in-progress A/c

1. Work-in-progress A/c
To Contract A/c

(being work certified)

₹2,00,000
₹2,00,000

2. Bank A/c Dr
To Contractor's A/c

(being amount received)

₹1,40,000

1,40,000

Balance Sheet

Asset Side

Work-in-progress	₹1,40,000
<i>Less: Amount received</i>	
	₹60,000
	₹80,000

Such work which has not been so far approved by the contractor's architect or surveyor is termed as "work uncertified". It is valued at cost and credited to the contract account and debited to the work-in-progress account, which will be transferred in the next year to the debit side of the contract account.

Work certified and work uncertified can be found in the following manner:

Cost of Work Certified:

Cost of work to date

Less: Cost of work uncertified

Materials on hand

Plant at site

= Cost of work certified

Cost of Work Uncertified:

Total cost to date

Less: Cost of work certified

Materials on hand

Plant at site

= Cost of work uncertified

WORK-IN-PROGRESS

Work-in-progress includes the amount of work certified (valued at contract price) and the amount of work uncertified. The work-in-progress account will appear on the asset side of the balance sheet. The amount of cash received from the contractor and reserve for contingencies (as discussed in the case of incomplete contracts) will be deducted out of this amount. The work-in-progress account appears as follows in the balance sheet.

1. When work certified has been treated according to the first method:
Balance sheet as on _____

Work-in-progress:

Balance in the contractor's A/c

Add: Work uncertified

Less: Reserve for unrealised profit

2. When work certified has been treated according to the second method:
Balance sheet as on _____

Work-in-progress:

Value of work certified

Cost of work uncertified

Less: Reserve for unrealised profit

Less: Amount received from contractor

In contract accounts the value of work-in-progress consists of: (i) the cost of work completed, both certified and uncertified, (ii) the cost of work not yet complete; and (iii) the amount of profit taken as credit. Taking these into account, the work-in-progress in the balance sheet can be shown as follows:

Balance sheet as on _____

Work-in-progress:

Cost of work certified

Cost of work uncertified

Less: Amount received from contractor

Add: Profit taken as credit to Profit and Loss A/c

PROFIT ON INCOMPLETE CONTRACTS

Many contracts take more than one financial year to be completed. A problem arises whether profit on such a contract should be worked out only on its completion or whether some profit may be computed every year. The conservative method is to value work-in-progress only at cost and no credit is taken for profit till it is actually earned. This method, however, results in wide fluctuations in the net profit of the enterprise from year to year. If several contracts are completed in a year, the profit will be high while in extreme cases in some years, when not a single contract is fully completed, the profit will be nil. It becomes necessary, therefore, to compute profit on partly completed contracts and take credit for a part of it in the accounts at the year end. The manner of computation of profit is largely dependent upon how far the contract has advanced that is, the stage of completion it has reached.

1. Profit should be considered in respect of work certified only, work uncertified should always be valued at cost.
2. For contracts which have been completed less than one-fourth of the contract, no profit should be computed and credited to the profit and loss account.
3. In case of contracts which are completed by more than 25% but less than 50%, one-third of notional profit, reduced in the ratio of cash received to work-certified, is transferred to profit and loss A/c. The balance in the notional profit is carried forward in the same contract as profit in suspense as a provision against future losses, increase in costs and other contingencies.

encies. The following formula is used to determine the amount of profit to be transferred to profit and loss A/c.

$$\frac{1}{3} \times \text{Notional profit} \times \frac{\text{Cash received}}{\text{Work certified}}$$

Notional profit is the difference between the value of work certified and cost of work certified. It is determined in the following manner:

$$\text{Notional profit} = \text{Value of work certified} - (\text{cost of work to date} - \text{cost of work certified})$$

In case contracts are complete between 50% and 90% (more than 50% but less than 90%), two-third of notional profit, reduced by the proportion of cash received to work certified, is transferred to profit and loss A/c. The formula to be used for this purpose is:

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

In case contracts are complete by 90% or more than 90%, the contract is considered almost complete. In such contracts, the estimated total profit is first determined by deducting the total costs to date and additional expenditure necessary to complete the contract from the contract price. A portion of this estimated total profit is credited to profit and loss A/c, which can be determined by using any one of the following formulae:

$$(i) \text{Estimated Profit} \times \frac{\text{Work certified}}{\text{Contract price}}$$

$$(ii) \text{Estimated Profit} \times \frac{\text{Work certified}}{\text{Contract price}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

or

$$\text{Estimated Profit} \times \frac{\text{Cash received}}{\text{Work certified}}$$

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year end.

The contract has

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50%, one-third

is transferred to

the same contract

and other contrac-

Retention Money in Contract Costing

If contractor does not receive the full payment of the work certified by the surveyor. Contractor retains some amount to be paid after some time, when it is ensured that there is no default in the

work done by the contractor. If any deficiency or defect is noticed, it is to be rectified by the contractor before the release of the retention money. Thus, the retention money provides a safeguard against the default risk in the contracts.

COST-PLUS CONTRACT

A cost-plus contract is a contract in which the value of the contract is determined by adding a fixed margin of profit to the total cost of the contract. Such types of contracts are entered into when it is not possible to estimate the contract cost with reasonable accuracy due to unstable price of material, labour, services, etc. The contractee agrees to pay this inflated value of contract which includes a profit margin as per the agreement. Inclusion of such a clause in a contract is called an Escalation clause. Both the parties determine in advance the possible costs that would be included in the cost of contract. The profit to be added to the cost of contract may be agreed as a percentage on cost or the capital employed. Cost-plus contracts are generally needed when the costs of contracts cannot be accurately determined due to unstable and fluctuating conditions of materials, labour and service, etc. The price of materials, labour and services usually tend to fluctuate over a long period. The contractor presents evidential proof of increased costs to the contractee to claim reimbursements. Under the escalator clause the contract price is increased for a given increase in the prices of inputs. For instance, it may be agreed that if the prices of raw materials go up by 15%, the contract price will be increased by 2%.

Cost-plus contracts are useful to both the parties, contractor (manufacturer), contractee (customer). The contractor is suitably protected against any fluctuations in the prices of materials, labour, and overhead which will be used in production or completion of the job. A cost-plus contract is beneficial to the contractee (customer) also. The contractee is protected against an uncertain market which may push up the cost of the contract. The price agreed to be paid by the contractee is based on actual cost. In this way the contract price is not determined arbitrarily.

Costs plus contracts have the following advantages:

1. The contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on the contract.
2. It is useful especially when the work to be done is not definitely fixed at the time of making the estimate.
3. Contractee can ensure himself about "the cost of the contract", as he is empowered to examine the books and document of the contractor to ascertain the veracity of the cost of the contract.

Example 10.4

A contract is estimated to be 80% complete in its first year of construction as certified. The contractee pays 75% of value of work certified, as and when certified and makes the final payment on the completion of contract. Following information is available for the first year:

Cost of work-in-progress uncertified

Profit transferred to Profit & Loss A/c at the end of year 1 on incomplete contract

Cost of work to date

₹ 8,000

₹ 60,000

₹ 88,000

Calculate the value of work-in-progress certified and amount of contract price.

(C.A., May, 2009)

Solution
As the contract is 80% complete, so 2/3rd of the notional profit on cash basis has been transferred to Profit & Loss A/c in the first year of contract.

$$\begin{aligned}\text{Amount transferred to Profit & Loss A/c} &= \frac{2}{3} \times \text{Notional Profit} \times \% \text{ of cost received} \\ &= \frac{2}{3} \times \text{Notional Profit} \times \frac{75}{100} \\ &= \frac{60,000 \times 3 \times 100}{2 \times 75} \\ &= ₹1,20,000\end{aligned}$$

Computation of value of work certified

$$\begin{array}{lcl}\text{Cost of work to date} & = ₹ 88,000 \\ \text{Add: Notional profit} & = ₹1,20,000 \\ & \hline \\ & ₹2,08,000 \\ \text{Less: Cost of work uncertified} & = 8,000 \\ \text{Value of work certified} & = \underline{\underline{₹2,00,000}}\end{array}$$

Since the value of work certified is 80% of the contract price, therefore

$$\begin{aligned}\text{Contract price} &= \frac{\text{Value of work certified}}{80\%} \\ &= \frac{₹2,00,000}{80\%} \\ &= ₹2,50,000\end{aligned}$$

Example 10.5

A contract expected to be completed in year 4, exhibits the following information:

End of Year	Value of work certified (₹)	Cost of work to date (₹)	Cost of work not yet certified (₹)	Cash received (₹)
1.	0	50,000	50,000	0
2.	3,00,000	2,30,000	10,000	2,75,000
3.	8,00,000	6,60,000	20,000	7,50,000

The contract price is ₹10,00,000 and the estimated profit is 20%.

You are required to calculate, how much profit should have been credited to the Profit and Loss A/c by the end of years 1, 2 and 3.*

(C.A., November, 2008)

* Cost of work certified = Cost of work to date - Cost of work not yet certified

Solution

End of year	Value of work certified (₹)	Cost of work certified* (₹)	Notional profit** (₹)	Amount that should have been credited to Profit and Loss A/c by the end of year (₹)
1	0	0	0	0
2	3,00,000	2,20,000	80,000	$\frac{1}{3} \times 80,000 \times \frac{2,75,000}{3,00,000} = 24,444$
3	8,00,000	6,40,000	1,60,000	$\frac{2}{3} \times 1,60,000 \times \frac{7,50,000}{8,00,000} = 1,00,000$

Workings:

End of year	Completion of Contract
Year 1	Less than 25 per cent.
Year 2	25 per cent or more than 25 per cent but less than 50 per cent.
Year 3	50 per cent or more than 50 per cent but less than 90 per cent.

Profit credited to P & L Account

No profit credited

Cumulative profit =

$$\frac{1}{3} \times \text{notional profit} \times \frac{\text{Cash received}}{\text{Value of work certified}}$$

Cumulative profit =

$$\frac{2}{3} \times \text{notional profit} \times \frac{\text{Cash received}}{\text{Value of work certified}}$$

Example 10.6

Compute a conservative estimate of profit on a contract (which has been 90% complete) from the following particulars. Illustrate 4 methods of computing the profit transferable to Profit & Loss Account.

	₹
Total expenditure to date	4,50,000
Estimated further expenditure to complete the contract (including contingencies)	25,000
Contract price	6,12,000
Work certified	5,50,800
Work uncertified	34,000
Cash received	4,40,640

(B.Com. (Hons), Delhi University, 2008)

** Notional profit = Value of work certified – (Cost of work to date – Cost of work not yet certified)

Solution**(a) Notional Profit**

Value of work certified

5,50,800

Less: Cost of work certified

4,16,000

(Total expenditure to date - work not certified)

1,34,800

(4,50,000 - 34,000)

Estimated Profit

Contract Price

6,12,000

Total expenditure to date

- 4,50,000

Estimated expenditure to be incurred

- 25,000

Profit transferred to Profit & Loss A/c**Method I**

$$\text{Notional profit} \times \frac{\text{Work certified}}{\text{Contract price}} = 1,34,800 \times \frac{5,50,800}{6,12,000} = 1,21,320$$

Method II

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

$$= 1,34,800 \times \frac{2}{3} \times \frac{4,40,640}{5,50,800} = 71,893.33$$

Method III

$$\text{Estimated profit} \times \frac{\text{Work certified}}{\text{Contract price}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$= 1,37,000 \times \frac{5,50,800}{6,12,000} \times \frac{4,40,640}{5,50,800} = 1,09,600$$

Method IV

$$\text{Estimated profit} \times \frac{\text{Cost to date}}{\text{Estimated total cost of work}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$= 1,37,000 \times \frac{4,50,000}{4,75,000} \times \frac{4,40,640}{5,50,800} = 1,03,831.20$$

Example 10.7

The ABC Ltd. has undertaken the construction of a bridge over the River Yamuna for a Corporation. The value of the contract is ₹15,00,000 subject to retention of 20% until one year after certifi-

filled completion of the contract, and final approval of the Corporation's Engineer. The following are the details as shown in the books on 30th June, 2009.

Labour on site	4,05,000	Materials on hand on June 30, 2009	6,300
Materials purchased	4,20,000	Wages, accrued on June 30, 2009	7,800
Materials sent from stores	81,200	Direct expenses accrued on June 30, 2009	1,600
Plant	12,100	Work not yet certified at cost	16,500
Direct expenses	23,000	Amount certified by the corporation's engineer	11,00,000
General overhead	37,100	Cash received on account	8,80,000
Allocated to the contract			

Prepare:

- Contract Account
- Contractee's Account and
- Show how it would appear in the Balance Sheet.

Solution:

Contract Account		
Particulars	₹	Particulars
To materials :		By Material in hand
Purchased	4,20,000	6300
Sent from stores	81,200	By Work-in-progress
	4,05,000	11,00,000
To Labour on Site		Work certified
Add: Wages accrued	7,800	11,16,500
To Direct expenses	23,000	Work uncertified
Add: accrued	1,600	
To Plant	12,100	
To General overhead	37,100	
To Profit c/d	1,35,000	
	11,22,800	
To Profit & Loss A/c	72,000	By Profit b/d
	63,000	1,35,000
To Work-in-progress A/c		
		1,35,000

*The profit taken to Profit and Loss Account has been arrived at as follows:

$$\text{₹}135000 \times \frac{2}{3} \times \frac{80}{100} = \text{₹}72,000$$

Contractor's Account

Particulars	₹	Particulars	₹
To Balance c/d	8,80,000	By Cash	8,80,000

ABC Ltd.

Extract from Balance Sheet
At 30th June, 2009

Liabilities	₹	Assets	₹
Wages accrued	7800	Work-in-progress:	
		Value of work certified	11,00,000
Direct expenses accrued	1600	Add: Work uncertified	16,500
			<u>11,16,500</u>
		Less : Reserve	63,000
			<u>10,53,500</u>
		Less : Cash received	8,80,000
			1,73,500
		Material in hand	6,300

Example 10.8

Company undertook a contract for a total value of ₹24,00,000. Prepare a Contract Account for the year ending 31st March, 2008 from the following particulars:

- (i) Wages ₹6,00,000.
- (ii) 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 the site on 31st March, 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% of the value of materials issued and 6% of the wages may be taken to have been incurred for the portion of the work completed but not yet certified.
- (ix) Overheads are charged as percentage of direct wages.
- (x) Ignore depreciation on plant for use on uncertified portion of the work.
- (xi) Ascertain notional profit and the amount to be transferred to Profit and Loss Account.
- (xii) Show the workings clearly.

Solution

Contract Account			
Particulars	₹	Particulars	₹
To Materials	3,00,000	By Work-in-Progress	
To Wages	6,00,000	Work certified	16,00,000
To Overhead charges (5% of wages)	1,20,000	Work uncertified	58,200*
			16,58,200

(Contd.)

	Amount	Particulars	Amount
Particulars			
Plant	30,000	$(36,000 \times \frac{100}{80})$	450,000
Balance c/d	$\frac{38,100}{5,07,000}$	Work uncertified	15,000
Profit and Loss A/c	20,320	By Balance b/d	5,07,000
Work-in-progress			38,100
			17,780

Note: Work uncertified = Material + Wages + Other expenses

$$\begin{aligned}
 &= 4,000 + 3,500 + 2,500 \\
 &= ₹10,000
 \end{aligned}$$

Example 10.10

In contracts, commenced on 1st January and 1st July, 2009 respectively, were undertaken by a contractor and their accounts on 31st Dec., 2009 showed the following position :

	Contract 1 (₹)	Contract 2 (₹)
Contract price	4,00,000	2,70,000
Expenditure:		
Materials	72,000	58,000
Wages paid	1,10,000	1,12,000
General charges	4,000	2,800
Plant installed	20,000	16,000
Materials on hand	4,000	4,000
Wages accrued	4,000	4,000
Work certified	2,00,000	1,60,000
Cash received in respect thereof	1,50,000	1,20,000
Work done but not certified (at cost)	6,000	8,000

The plant was installed on the date of commencement of each contract; depreciation thereon is to be taken at 10% per annum.
Prepare the Contract Accounts in the tabular form and ascertain the profit or loss to be taken to Profit and Loss Account.

(B.Com. (Hons), Delhi University, 2011)

Solution

		Contract 1	
<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Material	72,000	By Material in hand	4,000
To Wages ($(1,10,000 + 4,000)$)	1,14,000	By Work-in-progress	2,00,000
To Gen. charges	4,000	Work certified	2,06,000
To Plant	20,000	Work uncertified	18,000
To Notional profit	18,000	By Plant ($20,000 - 2,000$)	2,28,000
To P & L (Working Note 1)	2,28,000	By Notional Profit	18,000
To Work-in-progress (Reserve)	9,000		
	9,000		
	18,000		

Working Note-1

Percentage of completion is 50% i.e. $\left(\frac{2,00,000}{4,00,000}\right)$

Cash Received
Work Certified

So amount transferred to Profit & Loss Account is
= Notional profit $\times \frac{2}{3} \times \frac{1,50,000}{2,00,000}$

$$= 18,000 \times \frac{2}{3} \times \frac{1,50,000}{2,00,000} = 9,000$$

Contract 2

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Material	58,000	By Material on hand	4,000
To Wages ($1,12,000 + 4,000$)	1,16,000	By WIP	
To General charges	16,000	Work certified	1,16,000
To Plant	2,800	Work uncertified	<u>8,000</u> 1,68,000
		By Plant	16,000
		Less Dep. @ 10% for 6 months	<u>800</u> 15,200
		By Loss tr. to P & L A/c	<u>5,600</u> 1,92,800
			1,92,800

Since there is a loss the entire loss will be transferred to Profit & Loss A/c.

Example 10.11

The following trial balance was extracted on 31st Dec., 2011 from the books of SR Ltd (Contractors):

	Debit (₹)	Credit (₹)
(1) Share Capital (Shares of ₹10 each)	—	—
(2) P & L A/c on 1st Jan., 2011	3,51,800	—
(3) provision for dep. on machinery	25,000	—
(4) Cash received on A/c (Contract No. 7)	63,000	—
(5) Creditors	—	12,80,000
(6) Land and building (cost)	—	81,200
(7) Machinery (cost)	74,000	—
(8) Bank	52,000	—
(9) Contract No. 7;	45,000	—
Materials	6,00,000	—
Direct labour	8,30,000	—
Expenses	40,000	—
Machinery sent at site	1,60,000	—
	<u>18,01,000</u>	<u>18,01,000</u>
<i>(Contract No. 7 commences on 1st Jan., 2011. The contract price is ₹24,00,000 and the contractor has so far paid ₹12,80,000 being 80% of the work certified. The cost of work done since certification is estimated at ₹16,000.</i>		
<i>On 31st Dec., 2011, after the above trial balance was extracted, the machinery costing ₹42,000 was returned to store and material then on site was valued at ₹27,000. Provision is to be made for direct labour which is outstanding and for depreciation on machinery at 12.5% on cost.</i>		
<i>You are required to prepare the Contract A/c and the Balance Sheet of the company as on 31st Dec., 2011 assuming this was the only contract in hand during the period.</i>		
<i>(B.Com. (Hons), Delhi University, 2012)</i>		
<i>Solution</i>		
	₹	
	Contract No. 7 A/c	
	₹	
To Material sent to site	6,00,000	By Work-in-progress :
To Direct labour	8,30,000	Work certified
To Expenses	40,000	Work uncertified
To Machinery sent to site	1,60,000	By Machinery returned to store
To Provision for dep. on machinery	20,000	By Material at site
To balance c/d (Notional profit)	1,53,000	By Machinery at site
	<u>18,03,000</u>	<u>18,03,000</u>
To Profit & Loss A/c	81,600	By balance b/d (Notional profit)
To Work-in-progress (Reserve)	71,400	1,53,000
	<u>1,53,000</u>	<u>1,53,000</u>

Working Notes:

Since more than $\frac{1}{2}$ of the work has been certified, profit to be transferred to P & L. A/c can be calculated as follows:

$$\text{₹}1,53,000 \times \frac{2}{3} \times \frac{80}{100} = \text{₹}81,600$$

Provision for Depreciation on Machinery A/c

₹		₹
To Balance c/d	89,500	By Balance b/d
		63,000
		By Contract No. 7
		20,000
		(12.5% on ₹1,60,000)
		By P. & L. A/c (12.5% on ₹52,000)
		6,500
	<u>89,500</u>	<u>89,500</u>

Profit and Loss A/c

₹		₹
To Provision for dep. on machinery	6,500	By Balance b/d
		25,000
To Balance c/d	<u>1,00,100</u>	By Contract No. 7
		81,600
	<u>1,06,600</u>	<u>1,06,600</u>

Work-in-Progress A/c

₹		₹
To Contract No. 7:		By Reserve
Work certified	16,00,000	71,400
Work uncertified	<u>16,000</u>	<u>15,44,600</u>
	<u>16,16,000</u>	<u>16,16,000</u>

Balance Sheet as on 31st March 2012

Liabilities	₹	Assets	₹
Share Capital	3,51,800	Land and Building	74,000
Profit & Loss A/c	1,00,100	Machinery cost	94,000
Provision for dep. on machinery	89,500	Bank	45,000
Creditors	81,200	Contract No. 7: Work certified	16,00,000
		Work uncertified	<u>16,000</u>
			<u>16,16,000</u>
		Less: Reserve	71,400
			15,44,600
		Less: Cash received	12,80,000
			2,64,600
		Material at site	27,000
		Machinery at site	1,18,000
	<u>6,22,600</u>		<u>6,22,600</u>

Example 10.12

ABC Ltd. began to trade on 1st January, 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 which cost ₹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 A/c and the Balance Sheet from the following:

Trial Balance as on 31st December, 2006

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

(B.Com. (Hons) Delhi, 2007)

Solution**Contract A/c**

	₹	₹
To Material	90,000	By W.I.P
To Plant	25,000	Work certified 2,50,000
		Work uncertified 2,000 2,52,000
To Wages	1,40,000	By P and L A/c (Ab. Loss)
To Expenses	7,000	Material 4,000
To Balance c/d	21,000	Plant 5,000 9,000
		By Plant returned to stores 4,500
		(Cost less Depreciation (5000 - 500))
		By Plant at site 13,500
		By Material at site 4,000
	2,83,000	2,83,000
	11,200	21,000
	9,800	
	21,000	21,000
To P and L A/c		
To Reserve		

Balance Sheet of ABC Ltd. as on 31. Dec. 2006

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
Share capital	1,20,000	Land and Building	43,000
P and L A/c	11,200	Plant in store	4,500
<i>Less: Ab. Loss</i>	<u>9,000</u>	Plant at the site	13,500
Creditors	10,000	Material at site	4,000
		Work in progress	2,50,000
		Work certified	2,000
		Work uncertified	<u>2,52,000</u>
			9800
		<i>Less: Reserve</i>	<u>2,42,200</u>
		<i>Less: Cash received</i>	<u>2,00,000</u>
		Bank	42,200
			25,000
			<u>1,32,000</u>
	1,32,000		

Example 10.13

Paramount Engineers are engaged in construction and erection of a bridge under a long-term contract. The cost incurred upto 31.03.2001 was as under:

<i>Fabrication</i>	(₹ in Lakh)
Direct materials	280
Direct labour	100
Overheads	<u>60</u>
	440
Erection costs to date	<u>110</u>
	550

The contract price is ₹11 crores and the cash received on account till 31.03.2001 was ₹6 crores.

A technical estimate of the contract indicates the following degree of completion of work:

Fabrication—Direct Material—70%, Direct Labour and Overheads 60%, Erection—40%. You are required to estimate the profit that could be taken to Profit and Loss Account against this partly completed contract as at 31.03.2001.

(CA Inter, May 2001)

Solution

Estimation of profit to be taken to Profit and Loss Account against partly completed contract as at 31.3.2001

$$\begin{aligned}
 \text{Profit to be taken to P/L Account} &= \frac{2}{3} \times \text{Notional profit} \times \frac{\text{Cash received}}{\text{Work certified}} \\
 (\text{Refer to Working Notes 1, 2, 3 and 4}) &= \frac{2}{3} \times ₹92.48 \text{ lakh} \times \frac{₹600 \text{ lakh}}{₹642.48 \text{ lakh}} \\
 &= ₹57.576 \text{ lakh}
 \end{aligned}$$

Working Notes:

Statement showing estimated profit to date and future profit on the completion of contract

Particulars	Cost to date		Further costs		Total cost ₹
	% completion to date	Amount ₹ (a)	% completion to be done	Amount ₹ (b)	
<i>Fabrication costs:</i>					
Direct material	70	280.00	30	120.00	400.00
Direct labour	60	100.00	40	66.67	166.67
Overheads	60	60.00	40	40.00	100.00
Total fabrication costs: (A)		440.00		226.67	666.67
Erection cost: (B)	40	110.00	60	165.00	275.00
Total estimated costs: (A + B)		550.00		391.67	941.67
Profit		92.48		65.85	158.33
(Refer to Working Note 2)		642.48		457.52	1,100.00

2. Profit to date (Notional Profit) and future profit are calculated as below:

$$\text{Profit to date (Notional Profit)} = \frac{\text{Estimated profit on whole contract} \times \text{Cost at date}}{\text{Total cost}}$$

$$= \frac{\text{₹158.33} \times \text{₹550}}{\text{₹941.67}}$$

$$= \text{₹92.48 (lakh)}$$

$$\begin{aligned}\text{Future profit} &= \text{₹158.33} - \text{₹92.48} \\ &= \text{₹65.85}\end{aligned}$$

3. Work certified:

$$= \text{Cost of the contract to date} + \text{Profit to date}$$

$$= \text{₹550} + \text{₹92.48} = \text{₹642.48 lakhs}$$

4. Degree of Completion of Contract to date:

$$= \frac{\text{Cost of the contract to date}}{\text{Contract price}} \times 100$$

$$= \frac{\text{₹642.48 lakh}}{\text{₹1,100 lakh}} \times 100$$

$$= 58.40\%$$

Example 10.14

Modern Construction Ltd. obtained a contract No. B-37 for ₹40 lakh. The following balances and information relate to the contract for the year ended 31st March, 2008:

	1.4.2007 (₹)	31.3.2008 (₹)
• Work-in-progress:	9,40,000	30,00,000
• Work certified	11,200	32,000
• Work uncertified	8,000	20,000
• Materials at site	5,000	3,000
• Accrued wages		

Additional information relating to the year 2007–2008 are:

	₹
• Materials issued from store	4,00,000
• Materials directly purchased	1,50,000
• Wages paid	6,00,000
• Architect's fees	51,000
• Plant hire charges	50,000
• Indirect expenses	10,000
• Share of general overheads for B-37	18,000
• Materials returned to store	25,000
• Materials returned to supplier	15,000
• Fines and penalties paid	12,000

The contractee pays 80% of work certified in cash. You are required to prepare:

- Contract Account showing clearly the amount of profits transferred to Profit and Loss Account.
- Contractee's Account.
- Balance Sheet

(C.A May, 2007)

Solution

**Books of Modern Constructions Ltd.
Contract No. B-37 Account for the year ended 31st March, 2008**

	₹		₹
To WIP b/d (9,40,000 + 11,200)	9,51,200	By Wages accrued b/d	5,000
To Stock (materials) b/d	8,000	By Materials returned to store	25,000
To Materials issued	4,00,000	By Materials returned to suppliers	15,000
To Materials purchased	1,50,000	By WIP c/d-	
To Wages paid	6,00,000	Work certified	30,00,000
To Wages accrued c/d	3,000	Uncertified work	32,000
			30,32,000

(Contd.)

31.3.2008 ₹			
To Architect's fees	51,000	By Materials stock c/d	₹ 20,000
To Plant hire charges	50,000		
To Indirect expenses	10,000		
To General overheads	18,000		
To Notional profit c/d	8,55,800		
	<u>30,97,000</u>		
To Profit and Loss A/c $\left(\frac{2}{3} \times 8,55,800 \times \frac{80}{100} \right)$	4,56,427	By Notional Profit b/f	30,97,000 8,55,800
To WIP reserve c/d	3,99,373		
	<u>8,55,800</u>		

Note:
Fines and penalties are not shown in contract accounts.

Contractee's Account

To Balance c/d	24,00,000	By Balance b/d (80% of 9,40,000)	₹ 7,52,000
		By Bank	16,48,000
	<u>24,00,000</u>		<u>24,00,000</u>

Balance Sheet (Extract) as on 31.3.2008

	₹		₹
Profit and Loss A/c	4,56,427	Materials stock at site	20,000
Less: Fines	<u>12,000</u>	Materials stock in stock	25,000
Outstanding wages	3,000	WIP:	
		Work certified	30,00,000
		Work uncertified	32,000
			<u>30,32,000</u>
		Less: Advance	24,00,000
			<u>6,32,000</u>
		Less: WIP	
		Reserve	3,99,373 2,32,627

Example 10.15

PQR Construction Ltd. commenced a contract on April 1, 2009. The total contract was for ₹27,12,500. It was decided to estimate the total profit and to take to the credit of P/L A/c the proportion of estimated profit on cash basis which work completed bear to the total contract. Actual expenditure in 2009–10 and estimated expenditure in 2010–11 are given below:

(Contd.)

410 Cost Accounting

	2009-10 Actual (₹)	Estimated (₹)
Materials issued	4,56,000	3,80,000
Labour : Paid	3,05,000	37,500
Labour : Outstanding at end	24,000	-
Plant purchased	2,25,000	1,75,000
Expenses : Paid	1,00,000	25,000
Expenses : Outstanding at the end	-	-
Prepaid at the end	-	-
Plant returned to stores (a historical stores)	22,500	1,50,000 (on Dec 31 2010)
Materials at site	75,000	75,000
Work-in-progress certified	30,000	Full
Work-in-progress uncertified	10,00,000	---
Cash received	12,75,000	40,000
The plant is subject to annual depreciation @ 20% of WDV cost. The contract is likely to be completed on December 31, 2010.	10,00,000	Full
Required:		
(i) Prepare the Contract A/c for the year 2009-10 on prudent basis which has to be estimated on the contact for the year 2009-10 (CA November, 2010)		
(ii) Estimate the profit on the contract for the year 2009-10		
To P/L A/c credited to P/L A/c	4,37,500	4,37,500

Solution

PQR Construction Ltd
Contract A/c (April 1, 2009 to March 31, 2010)

Dr. Particulars	Amount (₹)	Cr. Particulars	Amount (₹)
To Materials Issued	4,56,000	By Plant returned to stores (Working Note 1)	60,000
To Labour	3,05,000	By Materials at site	30,000
Paid	24,000	By W.I.P.	12,75,000
Outstanding	2,25,000	Certified	40,000
To Plant purchased		Uncertified	13,15,000
To Expenses			
Paid	1,00,000		1,20,000
(-) Prepaid	22,500	By Plant at site	-
To Notional Profit c/d	15,25,000	(Working Note No. 2)	15,25,000
To Profit & Loss A/c (Refer to Working Note 5)	1,59,263	By Notional Profit b/d	4,37,500
To Work-in-progress A/c (Profit-in-reserve)	2,78,237		4,37,500

PQR Construction Ltd.
Contract A/c (April 1, 2009 to December 31, 2010)
(For computing estimated profit)

Debit Particulars	Amount (₹)	Particulars	Cr. Amount (₹)
To Materials issued (3,56,000 + 8,14,000)	12,70,000	By Materials at site	75,000
To Labour cost (Paid & Outstanding) (3,05,000 + 24,000 + 3,56,000 + 37,500)	7,22,500	By Plant returned to stores on 31.3.2010	60,000
To Plant purchased (Working Note 3)	2,25,000	By Plant returned to stores on 31.12.2010	1,02,000
To Expenses (77,500 + 1,97,500 + 25,000)	3,00,000	By Contractee A/c	27,12,500
To Estimated profit	4,32,000		
	29,49,500		29,49,500

Working Notes:**1. Value of the Plant returned to Stores on 31.03.2010**

Historical cost of the plant returned	75,000
Less: Depreciation @ 20% of WDV for one year	15,000
	<u>60,000</u>

2. Value of Plant at Site 31.3.2010

Historical cost of plant at Site	1,50,000
Less: Depreciation @ 20% on WDV for one year	30,000
	<u>1,20,000</u>

3. Value of Plant returned to Stores on 31.12.2010

Value of plant (WDV) on 31.3.2010	1,20,000
Less: Depreciation @ 20% of WDV for a period of 9 months	18,000
	<u>1,02,000</u>

4. Expenses paid for the year 2009-10

Total expenses paid	1,00,000
Less: Pre-paid at the end	22,500
	<u>77,500</u>

**5. Profit to be credited to Profit & Loss A/c on March 31, 2010 for the
Contract likely to be completed on December 31, 2010**

$$= \text{Estimated Profit} \times \frac{\text{Work certified}}{\text{Total contract price}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

*Labour paid in 2010-11 — 3,80,000 — 24,000 = 3,56,000

$$= 4,32,000 \times \frac{12,75,000}{27,12,500} \times \frac{10,00,000}{12,75,000}$$

$$= ₹15,92,263$$

Example 10.16

Brock Construction Ltd. commenced a contract on November 1, 2003. The total contract was for ₹39,37,500. It was decided to estimate the total profit of the contract and to take to the credit of P/L A/c that proportion of estimated profit on cash basis, which work completed bore to the total contract. Actual expenditure for the period November 1, 2003 to October 31, 2004 and estimated expenditure for November 1, 2004 to March 31, 2005 are given below:

	November 1, 2003 to October 31, 2004 (Actuals) ₹	November 1, 2004 to March 31, 2005 (Estimated) ₹
Material issued	6,75,000	12,37,500
Labour	Paid Prepaid Outstanding	(000) 4,50,000 25,000 —
Plant purchased	3,75,000	2,500
Expenses:	Paid Outstanding	2,00,000 50,000 75,000
Plant return to store (Historical cost)	(on March 31, 2004)	(on March 31, 2005)
Work certified	20,00,000	25,000
Work uncertified	75,000	3,00,000
Cash received	17,50,000	Full
Material at site	75,000	37,500

The plant is subject to annual depreciation @ 33% on written down value method. The contract is likely to be completed on March 31, 2005.

Required

Prepare the contract A/c. Determine the profit on the contract for the year November, 2003 to October, 2004 on prudent basis, which has to be credited to P/L A/c

(B. Com. (Hons.), Delhi 2009, CA, PE, Exam II, Group II, Nov. 2004)

**Brock Construction Ltd. Contract A/c
(November 1, 2003 to Oct. 31, 2004)**

Dr.

Particulars	Amount (₹)	Cr. Amount (₹)
To Materials issued	6,75,000	
To Labour paid	4,50,000	By Plant returned to store on 31/03/04
Prepaid	25,000	at cost
	4,25,000	75,000

(Contd.)

Dr.	Amount (₹)	Cr.
To Plant purchased	3,75,000	Less: Dep (1/3) 10,417
To Expenses paid	2,00,000	By WIP:
	<u>50,000</u>	Certified 20,00,000
To Outstanding	6,89,583	Uncertified 75,000
To Notional profit c/d	<u>24,14,583</u>	By Plant at site 20,75,000
To p/L A/c	1,04,136	31/10/04 at
2,34,305 ×		
(17,50,000)		Cost 3,00,000
20,00,000		Less: Dep (1/3) 1,00,000 2,00,000
x(20,00,000/39,37,500)]		By Materials at site 75,000
39,37,500]		24,14,583
To Work-in-progress	5,85,447	By Notional Profit b/d 6,89,583
(Profit in reserve)	6,89,583	6,89,583

Brock Construction Ltd. Contract A/c (1 November, 2003 to March 31, 2005)

(For computing estimated profit)

Dr.	Amount (₹)	Cr.
To Material issued	19,12,500	By Material at site 37,500
(6,75,000 + 12,37,500)		Site of house 64,583
To Labour (paid and outstanding)	10,15,000	By Plant returned to stores on 31/3/04 1,72,222
(4,25,000 + 5,87,500 + 2,500)		By Plant returned to stores on 31/3/05 1,72,222
To Plant purchased	3,75,000	Cost 3,00,000
		Less: Dep. 1,00,000
To Expenses	5,75,000	Less: 5 month Dep. 27,778
(2,50,000 + 3,25,000)		By Contractee A/c 39,37,500
To Estimated profit	<u>2,34,305</u>	42,11,805
		42,11,805

Example 10.17

A construction company undertook a contract at an estimated price of ₹108 lakh, which includes a budgeted profit of ₹18 lakh. The relevant data for the year ended 31.03.2002 are as under:

	(₹ '000)
Materials issued to site	5,000
Direct wages paid	3,800
Plant hired	700
Site office costs	270
Materials returned from site	100
Direct expenses	500
Work certified	10,000
Progress payment received	7,200
A special plant was purchased specifically for this contract at ₹8,00,000 and after use on this contract till the end of 31.02.2002, it was valued at ₹5,00,000. This cost of materials at site at the end of the year was estimated at ₹18,00,000. Direct wages accrued as on 31.03.2002 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.	
Solution	
Contract Account for the year ended 31st March, 2002	
Dr:	Cr:
Particulars	Amount (₹)
To Materials issued to site	₹ 000
5,000 By Materials at site	1,800
To Direct wages	3,800 By Materials returned
110 By Cost of contract	8,780
To Wages accrued	700
To Plant hire	270
To Site office costs	500
To Direct expenses	300
To Depreciation of special plant	10,680
To Cost of contract	8,780 By Work certified
To Profit and Loss A/c	1,200
(Refer to Working Note 2)	(800) ₹ 2,00,000.00
To Work-in-progress c/d (Profit in reserve)	20 By Work certified
	10,000

Working Notes:

1. Percentage of contract completion = $\frac{\text{Cost of work certified}}{\text{Value of the contract}} \times 100$

$$= \frac{100 \text{ lakh}}{108 \text{ lakh}} \times 100 = 92.59\%$$

2. Since the percentage of contract completion is more than 90% therefore the profit to be taken to Profit and Loss Account can be computed by using the following formula.

Profit to be taken to P and L A/c
 = Budgeted/Estimated Profit $\times \frac{\text{Cash received}}{\text{Work certified}} \times \frac{\text{Work certified}}{\text{Contract price}}$

$$\begin{aligned} &= 1,800 \times \frac{7,200}{10,000} \times \frac{10,000}{10,800} \\ &= 1,800 \times \frac{7,200}{10,800} \\ &= ₹1,200 \end{aligned}$$

Example 10.18

M's New Century Builders have entered into a contract to build an office building complex for ₹40 lakh. The work started in April 1997 and it is estimated that the contract will take 15 months to be completed. Work has progressed as per schedule and the actual costs charged till March 1998 are as follows:

	(₹ in lakh)
Materials	112.20
Labour	162.00
Hire charges for equipments and other expenses	36.00
Establishment charges	32.40
	<hr/>
	342.60

The following information are available:

₹ in lakh)

Materials in hand (March 31, 1998) ₹6.60

Work certified (of which ₹324 lakh
have been paid) at March 31, 1998

₹400.00
7.50

Work not yet certified at March 31, 1998, at cost

As per management estimates, the following further expenditure will be incurred to complete the work:

	₹ (in lakh)
Materials	10.50
Labour	16.00
Sub-contractor	20.00
Equipments hire and other charges	3.00
Establishment charges	6.90

You are required to compute the value of work-in-progress as on March 31, 1998 after considering a reasonable margin of profit and show the appropriate accounts. Make a provision for contingencies amounting to 5% of total costs.

Solution

Contract Account			
<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Materials	1,12,20,000	By Stock of materials	6,50,000
To Labour	1,62,00,000	By Work-in progress:	
To Hire charges	36,00,000	Work certified	4,00,00,000
To Establishment charges	32,40,000	Work uncertified	7,50,000
To Profit c/d	71,50,000		
	<u>4,14,10,000</u>		<u>4,14,10,000</u>
To Profit & Loss A/c (WN. 1)	50,00,000	By Profit b/d	71,50,000
To Balance (being reserve)	<u>21,50,000</u>		<u>71,50,000</u>

Contractee's Account

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Contract A/c	4,00,00,000	By Bank	3,24,00,000
		By Balance c/d	76,00,000
	<u>4,00,00,000</u>		<u>4,00,00,000</u>

Working Notes:

1. Profit to be taken to P&L

The profit to be taken to P&L Account on the contract for the year ending 31st March, 1998 has been arrived at as follows

Expenditure upto March 31, 1998 ($\text{₹}3,42,60,000 - 6,60,000$) = $\text{₹}3,36,00,000$

Add: Estimated Expenditure to Complete:

Materials

10,50,000

Add: Stock as on March 31, 1998 6,60,000

17,10,000

Labour

16,00,000

Sub contractors

20,00,000

Hire charges on equipment etc.

3,00,000

Establishment charges

6,90,000

Provision for contingencies
(@ 5% on total cost $(3,99,00,000 \times 5/95)$)

4,20,00,000

Total estimated cost

60,00,000

Total estimated profit

4,80,00,000

Profit to be taken to P&L = Total estimated profit $\times \frac{\text{Work certified}}{\text{Contract price}}$

$$= ₹60,00,000 \times \frac{₹4,00,00,000}{₹4,80,00,000} = ₹50,00,000$$

Computation of value of work-in-progress

2. Computation of value of work certified	4,00,00,000
Add: Cost of work uncertified	7,50,000

Add: Cost of work uncertified

Less: Reserve being profit not taken to P&L as on 31.3.1998

21,50,000
3,86,00,000

Less: Cash received

3,24,00,000
62,00,000

Balance of work-in-progress to be shown in balance sheet

Example 10.19

Surya Construction Ltd. with a paid up share capital of ₹50 lakhs undertook a contract to construct MG apartments. The work commenced on the contract on 1st April 2000. The contract price was ₹60 lakh. Cash received on account of the contract upto 31st March, 2001 was ₹18 lakh (being 90% of the work certified). Work completed but not certified was estimated at ₹1,00,000. As on 31st March 2001 material at site was estimated at ₹30,000, machinery at site costing ₹2,00,000 was returned to stores and wages outstanding were ₹5,000. Plant and machinery at site is to be depreciated at 5%.

The following were the ledger balances (Dr.) as per trial balance as on 31st March 2001:

₹	
23,00,000	Land and Building
25,00,000	Plant and Machinery (60% at site)
60,000	Furniture
14,00,000	Materials
1,25,000	Fuel and Power
5,000	
12,000	Site expenses
15,000	Office expenses
1,33,000	Rates and taxes
2,50,000	Cash at Bank
Wages	

Prepare the Contract Account and Balance Sheet.

*The amount of profit may further be reduced to cash basis, if desired.

Solution**Contract Account**

Dr:

<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Materials	14,00,000	By Work Certified	
<i>Less:</i> Material at site	(-) 30,000	13,70,000	$\frac{18,00,000 \times 100}{90} = 20,00,000$
To Wages	2,50,000	By Work Uncertified	<u>1,00,000</u> $\frac{21,00,000}{21}$
<i>Add:</i> O/s	+ 5,000	2,55,000	
To Fuel & Power		1,25,000	
To Site expenses		5,000	
To Office expenses	12,000		
To Rates & Taxes	15,000		
To Depreciation on machine at site			
$\left(\frac{25,00,000 \times 60 \times 5}{100 \times 100} \right)$		75,000	
To Balance c/d		2,43,000	
To Profit and Loss A/c		<u>21,00,000</u>	<u>21,00,000</u>
		By Balance b/d	
2,43,000 $\times \frac{1}{3} \times \frac{90}{100}$	72,900		
To Reserve transferred to W/P	1,70,100		
	<u>2,43,000</u>		<u>2,43,000</u>

Working Notes. 1. Work Certified

$$\frac{18,00,000 \times 100}{90} = 20,00,000$$

Less: Cash Received =

$$\frac{18,00,000}{2,00,000} = 90$$

Less: Profit transferred to WIP

$$\frac{1,70,100}{29,900} = 57$$

Add: Work uncertified

$$\frac{1,00,000}{1,29,900} = 75$$

No depreciation has been charged on Land and Building and furniture as the same have not been shown at site.

2. No depreciation shown at site.
not been returned to stores $\text{₹}2,00,000 - 5\% \text{ of } \text{₹}2,00,000$

3. Machinery
 $= \text{₹}2,00,000 - 10,000$
 $= \text{₹}1,90,000$

Balance Sheet as on 31st March 2001

Liabilities	Amt.	Assets	Amt.
Authorised and subscribed capital	—	Work in progress (1)	1,29,900
Issued and paid up capital	50,00,000	Land and Building	23,00,000
		Machinery at site	15,00,000
OS Wages	72,900	(-) Depreciation	<u>(-) 75,000</u>
Profit and Loss A/c	5,000		14,25,000
		(-) Returned	(+) 1,90,000
		Machinery at office	10,00,000
		(+) Returned from site	+ 1,90,000
Furniture			11,90,000
Bank			60,000
Materials at site			1,33,000
			30,000
			50,77,900
			50,77,900

Example 10.20
A contractor, who prepares his account on 31st December each year, commenced a contract on 1st April, 2001. The costing records concerning the said contract reveal the following information on 31st December, 2001.

Materials charged to site	₹2,58,100
Labour engaged	5,60,500

Foremen's salary

79,300

Plants costing ₹2,60,000 had been on site for 146 days. Their working life is estimated at 7 years and their final scrap value at ₹15,000. A supervisor, who is paid ₹4,000 p.m., has devoted approximately three-fourths of his time to this contract. The administrative and other expenses amounts to ₹1,40,000. Materials in hand at site on 31st December, 2001 cost ₹25,400. Some of the material costing ₹4,500 was found unsuitable to the contract and was sold at a profit of ₹1,000, costing ₹5,500 (on 31.12.2001) unsuited to the contract was accepted by the contractor for ₹30,00,000. On 31st December, 2001 two-thirds of the contract was completed. Architect's certificate had been issued covering 50% of the contract price and ₹7,50,000 has so far been paid on account. Prepare

contract account and state how much profit or loss should be included in the financial accounts on 31st December, 2001. Workings should be clearly given. Depreciation is charged on time basis.

(B. Com. (Hons.), Delhi, 2006), (CA Inter, 2006)

Solution

Contract Account (From April 1, Dec. 31 2001)

Particulars	₹	Particulars	₹
To Materials	2,58,100	By Materials at site	25,400
To Labour engaged	5,60,500	By Materials sold	4,000
To Foremen's salary	79,300	By Profit and Loss A/c	500
To Supervisor's salary (WN:1)	27,000	(Loss on sale of materials)	
To Depreciation of plant (WN: 2)	14,000	By Cost of work done c/d	10,49,000
To Administrative and other expenses	1,40,000		
	<u>10,78,900</u>		<u>10,78,900</u>
To Cost of work done b/d	10,49,000	By Work-in-progress:	
To Profit c/d	2,13,250	Work certified (WN: 3)	10,00,000
	<u>12,62,250</u>	Work uncertain (WN: 3)	<u>2,62,250</u>
To Profit and Loss A/c	1,06,625	By Profit b/d	2,13,250
($2,13,250 \times 2/3 \times 7,50,000 / 10,00,000$)	<u>1,06,625</u>		
To work-in-progress A/c (Reserve)	<u>2,13,250</u>		

Contractee's Account

To Balance c/d	₹7,50,000	By Bank	₹7,50,000
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Extracts from Balance Sheet as on 31st December, 2001

Liabilities	Assets
Profits and Loss A/c (WN: 4)	1,07,125
Work-in-progress:	
Work certified	10,00,000
Work uncertified	2,62,250
Less: Reserve in respect of work in progress	<u>12,62,250</u>
Less: Reserve	<u>1,06,625</u>
Less: Cash received	11,55,625
Less: Cash received	4,05,625
Less: Cash received	25,400
Work-in-progress (Material at site) to debit side	2,40,500
Work-in-progress (Plant at site) (WN: 5)	

Working Notes:

Supervisor's salary: $3/4 (9 \text{ months} \times ₹4,000) = ₹27,000$

Supervision of plant: $(₹2,60,000 - ₹15,000)/7 \text{ years} \times 146/365 = ₹14,000$

1. Depreciation uncertified.

2. Cost of work uncertified.

3. Cost of 2/3rd of the contract is ₹10,49,000

Cost of 2/3rd of the total contract will amount to $₹10,49,000 \times 3/2 = ₹15,73,500$

The estimated cost of the contract, as certified by the architect would be ₹15,73,500/2 = ₹7,86,750.

Cost of 50% of the work done but uncertified would, therefore, be ₹10,49,000 - ₹7,86,750 = ₹2,62,250.

Profit and Loss Account

₹500 By Contract A/c (Profit transferred)	₹1,06,625
To Contract A/c (Loss on sale of materials)	1,07,125
To Balance c/d (Profit on sale of plant)	1,07,625

Plant Account

₹2,60,000 By Contract A/c (Depreciation)	₹14,000
1,000 By Bank (sale)	6,500
To Profit and Loss A/c (Profit on sale of plant)	By Balance c/d
2,61,000	2,40,500

Example 10.21

The contract ledger of Alpha Co. revealed the following expenditure on account of contract on 31st December, 2000.

	₹
Materials	(600,000)
Plant	(100,000)
Wages	(2,93,000)
Expenses	(15,000)
Establishment charges	(10,000)

The contract was started on 1st Jan., 2000 and the contract price was ₹10,00,000. Cash received to date was ₹4,80,000 representing 80% of the work certified. the remaining 20% being retained until completion. The value of plant on 31st December, 2000 was ₹20,000 and the value of material on hand was ₹6,000. The cost of work finished but not certified on the said date was ₹50,000.

Some of the materials, costing ₹20,000 were found unsuitable and were sold for ₹16,000 and a part of the plant costing ₹5,000 unsuited to the contract was sold at a profit of ₹1,000.

In order to calculate the profit made on the contract to 31st December, 2000 the contractors estimated further expenditure that would be incurred in completing the contract and took to the credit of Profit and Loss Account for the year that proportion of the estimated net profit to be realised on the contract which the value of work certified bore to the contract price.

The estimates were as under:

- that the contract would be completed by 30th June 2001.
 - that a further sum of ₹30,000 would have to be spent on plant and the residual value of the plant on the completion of the contract would be ₹12,000.
 - the materials in addition to those on hand on 31st December, 2000 would cost ₹1,00,000 and that further sundry expenses of ₹7,000 would be incurred.
 - that the wages on the contract for the six months to June, 2001 would amount to ₹1,69,900.
 - that the establishment charges would cost the same amount per month as in the previous year.
 - that ₹18,000 would be sufficient to meet the contingencies.
- Prepare the contract account for the year ended 31st December, 2000 and show your calculations of the profit to be credited to Profit and Loss A/c of the year.
(B. Com (Hons), Delhi, 2007)

Solution

Contract A/c (for the year ended 31.12.2000)

	₹		₹
To Materials	2,10,000	By Materials sold	16,000
To Wages	2,93,000	By P and L A/c	13,81,800
To Plant	70,000	(Loss on material sold)	4,000
To Sundry expenses	15,000	By Plant sold	6,000
To Establishment charges	10,000		20,000
To P and L A/c (Profit on plant sold)	1,000	By Plant on site	6,000
To Balance c/d	1,03,000	By Material in hand	6,00,000
		By Work-in-progress A/c :	
		Work certified	6,00,000
		Work uncertified	50,000
	<u>7,02,000</u>		<u>7,02,000</u>
2000, Dec. 31	65,460	2000 Dec. 31	1,03,000
To P and L A/c:		By Balance b/d	
$\left(\text{Profit } \frac{1,09,100 \times 6,00,000}{10,00,000} \right)$	37,540		1,03,000
To Work-in-progress			
(Balance of profit)	<u>1,03,000</u>		

Estimated Contract A/c on Completion

	₹		₹
To Materials		By Materials sold	16,000
(2,00,000 + 1,00,000)		By P and L A/c	4,000
		(Loss on materials sold)	
To Wages (2,93,000 + 1,69,000)	4,62,900	By Plant sold	6,000
To plant (70,000 + 30,000)	1,00,000	By Plant at the close	12,000
To P and L A/c; Plant sold	1,000	By Contractor's A/c :	
To Sundry exp. (15,000 + 7,000)	22,000	Contract price	10,00,000
To Establishment charges (10,000 + 5,000)	15,000		
To Contingencies	18,000		
To P and L A/c:			
Profit on completion estimated	<u>1,09,100</u>		
	<u>10,38,000</u>		

Example 10.22 (Escalation Clause)

Deluxe Limited undertook a contract for ₹5,00,000 on 1st July 2001. On 30th June 2002, when the accounts were closed, the following details about the contract were gathered.

	₹
Materials purchased	1,00,000
Wages paid	45,000
General expenses	10,000
Plant purchased	50,000
Materials on hand 30.6.2002	25,000
Wages accrued 30.6.2002	5,000
Work certified	2,00,000
Cash received	1,50,000
Work uncertified	15,000
Depreciation of plant	5,000

The above contract contained an escalation clause which reads as follows:

"In the event of prices of materials and rates of wages increase by more than 5% the contract price will be increased accordingly by 25% of the rise in the cost of materials and wages beyond 5% in each case".

It was found that since the date of signing the agreement the prices of materials and wage rates increased by 25%. The value of the work certified does not take into account the effect of the above clause.

Prepare the contract account. Workings should form part of the answer.

Solution

Contract Account			
To Materials	1,00,000	By Work-in-progress:	₹
To Wages (45,000 + 5,000)	50,000	Work certified	2,00,000
To General expenses	10,000	Work uncertified	15,000
To Depreciation on plant	5,000	Contract escalation (Working Note 1)	5,000
To Profit:			25,000
Transferred to P and L (Working Note 2)	20,000	By Materials in hand	
Taken to WIP	60,000		
			<u>2,45,000</u>

Working Notes:

1. Escalation charges:

(a) Materials

Effect of increase in price of materials

$$\text{Total increase (₹)} = 75,000 \times 25/125 = 15,000$$

(b) Wages

Effect of increase in wage rates

$$\text{Total increase (₹)} = 50,000 \times 25/125 = 10,000$$

$$\text{Increase in contract Price} = 25,000$$

$$\text{Price (25% of increase beyond 5%)} = 20,000 \times 25/100 = ₹5,000$$

2. Computation of profit transferred to Profit and Loss Account: Since more than 1/4th but less than 1/2 of the contract has been completed, 1/3 of the profit earned as reduced on cash basis has been transferred to Profit and Loss Account.

$$80,000 \times \frac{1}{3} \times \frac{1,50,000}{2,00,000} = ₹20,000$$

Example 10.23 (Escalation Clause)

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

Material	Standard		Actual	
	Quantity (Tonnes)	Rate per Tonme (₹)	Quantity (Tonnes)	Rate per Tonme (₹)
A	3,000	1,000	3,400	1,100
B	2,400	800	2,300	700

Material	Standard			Actual		
	Quantity (Tonnes)	Rate per Tonne	Quantity (Tonnes)	Rate per Tonne	Hours	Hourly Rate
C	500	4,000	600	3,900		
D	100	30,000	90	31,500		
Labour:						
L ₁	60,000	₹ 15	56,000	₹ 18		
L ₂	40,000	₹ 30	38,000	₹ 35		

You are required to:

- Give your analysis of admissible escalation claim and determine the final contract price payable.
- Prepare the contract account, if the all expenses other than material and labour related to the contract are ₹13,45,000.

Solution

Statement showing additional claim due to escalation clause

Material	Statement			Escalation		
	Std. Qty/Hours	Std. Rate	Actual Rate	Variation in Rate (₹)	Claim (₹)	
	(a)	(b)	(c)	(d) = (c-b)	(e) = (a × d)	
A	3000	₹ 1000	₹ 1100	+100	+3,00,000	
B	2400	800	700	-100	-2,40,000	
C	500	4000	3900	-100	-50000	
D	100	30000	31500	+1500	+1,50,000	
					1,60,000	
Labour:						
L ₁	60,000	₹ 15	18	+3	+1,80,000	
L ₂	40,000	₹ 30	35	+5	+2,00,000	
					3,80,000	

Statement showing Final Contract Price

Agreed contract price	₹ 1,60,000	1,60,000
Add Agreed escalation claim:		5,40,000
Material cost	3,80,000	<u>3,80,000</u>
Labour cost		1,55,40,000
Final Contract Price		

Contract Account

Dr.	₹	Cr.
	By Contractor's A/c	1,55,40,000
To Material:		
A-3,400 × ₹1,100	3,740	
B-2,300 × ₹700	1,610	
C-600 × ₹3,900	2,340	
D-90 × ₹31,500	2,835	
To Labour:		
L ₁ -56,000 × ₹18	1,008	
L ₂ -38,000 × ₹35	1,330	
To Other expenses		
	13,32,000	
To Profit and Loss A/c		
	1,55,40,000	

BATCH COSTING

As stated earlier, a job order can be for an item or a number of items. In the case of the latter, the order is strictly a batch and the total batch cost must be divided by the quantity to give the cost per item. While job costing is concerned with the costing of jobs that are made to a customer's particular requirements, batch costing is used where articles are manufactured in definite batches and held in stock for sale to customers generally. When each order is finished/completed, the cost sheet is totalled and the total cost divided by the quantity produced to show the cost per article or per dozen, etc.

ECONOMIC BATCH QUANTITY

What should be the optimum size of a batch, is an important question. If the size is higher, the unit costs may tend to decline, but the units in inventory will go up. The size of the batch influences the clerical and other machine set-up costs also. Therefore, an economic batch quantity should be determined. Generally, the following formula is used which is similar in nature to economic order quantity.

$$E = \sqrt{\frac{2U.S}{C\left(1 - \frac{U}{R}\right)}}$$

where
 U = Economic order quantity
 U = Annual usage in units

S = Set-up and order processing costs
 R = Annual rate of production

C = Cost of carrying one unit in inventory for one year

If the production of the batch is done over a short period, $\frac{U}{R}$ loses its significance and only then the following formula is applied:

$$E = \sqrt{\frac{2U.S}{C}}$$

Example 10.24 A jobbing factory has undertaken to supply 200 pieces of a component per month for the ensuing six months. Every month a batch order is opened against which materials and labour hours are recorded at actuals. Overheads are levied at a rate per labour hour. The selling price contracted for is ₹ 5 per piece. From the following data, present the cost and profit per piece of each batch order and overall position of the order for 1,200 pieces.

Month	Batch output	Material cost (₹)	Direct wages (₹)	Direct labour (hr)
Jan.	210	650	120	240
Feb.	200	640	140	280
Feb.	220	680	150	280
March	180	630	140	270
April	200	700	150	300
May	220	720	160	320
June				

The other details are:

Month	Chargeable expenses (₹)	Direct labour (hr)
Jan.	12,000	4,800
Feb.	10,560	4,400
March	12,000	5,000
April	10,580	4,600
May	13,000	5,000
June	12,000	4,800

Solution

Cost Sheet for Six Months Ending 30th June

Month	Jan.	Feb.	March	April	May	June	(Output 1230 units)	
							Total	
Batch output (in units)	210	200	220	180	200	220	1,230	
Sales value (in ₹)								
Cost of materials (in ₹)	1,680	1,600	1,760	1,440	1,600	1,760	9,840	
Direct wages (in ₹)	650	640	680	630	700	720	4,020	
Chargeable expenses (in ₹)	120	140	150	140	150	160	860	
Total cost (in ₹)	600	672	672	621	780	800	4,145	
Total cost per unit (in ₹)	1,370	1,452	1,502	1,391	1,630	1,680	9,025	
Profit per batch (in ₹)	310	148	258	49	-30	80	815	
Profit per unit (in ₹)	0.74	0.74	1.17	0.27	-0.15	0.36	0.66	

Overall position of the order for 1,200 units:
 Sales value of 1,200 units @ ₹8 per unit
 Total cost for 1,200 units @ ₹7.34 per unit
 Profit

Note:

Chargeable expenses have been charged to different batches on the basis of direct labour hour for different months; for example

$$\text{For January } \frac{\text{₹12,000}}{4,800} \times 240 = 600$$

Example 10.25

A work order for 500 units of a commodity has to pass through four different machines of which the machines hour rates are

	Sales p
No. I	1.25
No. II	3.00
No. III	4.00
No. IV	2.50

The following expenses have been incurred on the work order. Materials ₹20,000 and wages ₹1,500.

Machine I	Worked for 200 hours
Machine II	Worked for 300 hours
Machine III	Worked for 240 hours
Machine IV	Worked for 100 hours

After the work order had been executed, materials worth ₹1,000 were returned to stores. Office overheads are to be estimated @ 60% of works cost; 10% of the production is going to be discarded, being unsatisfactory for which 1/2 the amount can be realised from sale in the junk market. Find out the rate of selling price per unit if 20% profit on selling price is desired.

Solution**Statement Showing Cost and Selling Price for 500 Units**

	₹	₹
Material used	20,000	
— Less returned	1,000	19,000
Wages		1,500
Prime cost		20,500
Work overhead: Hours × Rate		
Machine No. I 200 × ₹1.25	250	

(Contd.)

Machine No. II	₹1,500
Machine No. III	₹3,800
Machine No. IV	₹1,200
Work cost	600

Office overheads: 60

Loss: Sale of discar
10% discarded
Half to be realis

Loss
Total cost
Profit 20% on selli

Note: It has bee
order, after the di
Selling price p

Theory Questions

1. (i) What is
(ii) Explain
2. Indicate ho
(a) Plan
(b) Amo
(c) Mate
3. (i) Discuss
(a) Man
(b) Cust
(ii) What i
4. Describe t
5. How will
6. What do y
7. Distinguis
8. Explain t
(i) Not
(ii) Ret
Discuss t

		₹
Machine No. II	$300 \times ₹3.00$	900
Machine No. III	$240 \times ₹4.00$	960
Machine No. IV	$100 \times ₹2.50$	250
Work cost		2,360
Office overheads: 60% of works cost		22,860
		13,716
		36,576

Theory Questions

1. (i) What is the nature of job costing? How are the costs recorded on job orders?
 (ii) Explain the meaning of contract costing and batch costing.

2. Indicate how you would deal with the following items:
 (a) Plant and machinery purchased and used on contract work.
 (b) Amounts received from contractor.
 (c) Materials lying unused at site.

3. (i) Discuss the implications of cost-plus contracts from the viewpoint of:
 (a) Manufacturer
 (b) Customer

(ii) What is the relevance of the escalation clause provided in a contract?

4. Describe briefly the nature of accounting problems associated with job costing.

5. How will you treat profit on incomplete contracts in cost accounts? *(B.Com. (Hons), Delhi, 2002)*

6. What do you understand by cost-plus contract and escalation clause in contract costing? *(B.Com. (Hons), Delhi, 2004, 2007)*

7. Distinguish between job costing and process costing. *(B.Com. (Hons), Delhi, 2005, 2006, ICWA, Inter, Stage I, Dec., 2006)*

8. Explain the following:
 (i) Notional profit in contract costing.
 (ii) Retention money in contract costing.

9. Discuss the process of estimating profit/loss on incomplete contracts. *(CA, PE, Exam II, Group II, May 2007)*

Note: It has been presumed that net resulted output is 500 units, that is, the quantum of work order, after the discarded units have been adjusted for.

$$\text{Selling price per unit} = \frac{\text{₹}43,434}{500} = \text{₹}86.86 \text{ approx.}$$

Profit 20% on selling price or 25% on cost	8,686.80
Sales per unit	43,434.00

Choose the correct answer for the following multiple-choice questions:

1. Which of the following production activities would be most likely to employ job order costing?
 - (a) Ship building
 - (b) Candy manufacturing
 - (c) Toy manufacturing
 - (d) Crude oil refining
2. In job-order costing, the basic document to accumulate and ascertain the cost of each order is the
 - (a) Purchase order
 - (b) Requisition sheet
 - (c) Invoice
 - (d) Job cost sheet
3. Which of the following will not be used in job-order costing?
 - (a) Standards
 - (b) Marginal costing
 - (c) Averaging of direct labour and material rates
 - (d) Factory overhead allocation based on direct labour hours applied to the job.

Problems

Job Costing

1. The following information for the year ending December 31, 2012 is obtained from the books and records of a factory:

	Completed jobs	Work-in-progress
Raw materials supplied from stores	₹ 90,000	30,000
Wages	1,00,000	40,000
Chargeable expenses	10,000	4,000
Materials transferred to work-in-progress	2,000	2,000
Materials returned to stores	1,000	

Factory overheads is 80% of wages and office overhead is 25% of factory cost.

The value of executed contracts during 2013 was ₹4,10,000. Prepare the:

(i) consolidated completed jobs account, and (ii) consolidated work-in-progress account.

Ans: (i) Profit ₹63,750
(ii) Balance c/d in WIP ₹1,35,000

2. A factory uses a job costing system. The following data are available from the books at the year ending 31st March 2012.

Direct material		₹ 9,00,000
Direct wages		7,50,000
Profit		6,09,000
Selling and distribution overhead		5,25,000
Administrative overhead		4,20,000
Factory overhead		4,50,000

Required:

- (a) Prepare a cost sheet indicating the prime cost, works cost, production cost, cost of sales and sales value.

(b) In 2012–13, the factory has received an order for a number of jobs. It is estimated that the direct materials would be ₹12,00,000 and direct labour would cost ₹7,50,000. What would be the price for these jobs if the factory intends to earn the same rate of profit on sales, assuming that the selling and distribution overhead has gone up by 15%. The factory recovers factory overhead as a percentage of direct wages and administrative and selling and distribution overhead as a percentage of works cost, based on the cost rates prevalent in the previous year.

(CA Inter)

Ans: (a) Prime cost ₹16,50,000, Works cost ₹21,00,000, Production cost ₹25,20,000, Cost of sales ₹30,45,000, Sales value ₹36,54,000.

3. Honesty Engineering Works has a machining shop in which it manufactures two auto parts, P1 and P2 out of forging F1 and F2. For the quarter ending December 2012, following cost data are available:

Consumption of raw materials: F1		
: F2		₹ 1,50,000
Wages and salaries		2,00,000
Stores and spares		1,53,000
Repairs and maintenance		12,000
Power		15,000
Insurance		16,000
Depreciation		8,000
Factory overheads		50,000
Administration overhead		68,000
Distribution overheads		64,400
Total cost		75,000
		<u>8,11,400</u>

You are given following further information:

- (a) Production and sale of P1 and P2 were as under:

	P1	P2
Production (pieces)	6,000	4,000
Sales of above pieces (₹)	4,80,000	5,20,000

- (b) Direct wages paid were ₹36,000 in case of P1 and ₹32,000 for P2. This basis is used for portioning wages and salaries and factory overheads. Following machine-hours were utilised in production of these products:

P1	550
P2	450

- (c) Stores and spare, repairs and maintenance, power, insurance and depreciation are charged to cost of both the products on the basis of respective conversion costs while Administrative overheads are apportioned on the basis of their sales realisation.

(d) All the production was sold out.

Required: Prepare cost sheets of both the products and work out profit earned on each of them.

Ans: Profit P1 ₹86,940, P2 ₹1,01,566

4. A manufacturing company has an installed capacity of 1,20,000 units per annum. The cost structure of the product manufactured is as under:

Variable cost (per unit)	₹8.00
Material	₹8.00
Labour (subject to a minimum of ₹56,000 per month) overheads	₹3.00 ₹1,04,000 per annum

Fixed overheads ₹48,000 per annum at 60% capacity, which increase by ₹6,000 per annum for increase of every 10% of the capacity utilisation or any part thereof.

The capacity utilisation for the next year is estimated at 60% for 2 months, 75% for 6 months and 80% for the balance part of the year. If the company is planning to have a profit of 25% on the selling price, calculate the estimated selling price for each unit of production. Assume there is no opening or closing stock.

The capacity utilisation for the next year is estimated at 60% for 2 months, 75% for 6 months and 80% for the balance part of the year. If the company is planning to have a profit of 25% on the selling price, calculate the estimated selling price for each unit of production. Assume there is no opening or closing stock.

5. The expenses of a new machine for a particular month are as under:

- (i) Power ₹50,000, (ii) maintenance and repairs ₹10,000, machine operator's wages ₹2,000, (iv) supervision ₹6,000 (v) Depreciation ₹40,000. Other particulars are given below:

Product	Rate of Production (units/hr.)	Production units
A	30	1,800
B	10	500
C	6	300
D	4	260

The entire production was offered to the Government on 'cost-plus 20%' basis. Material cost per unit are: A: ₹40; B: ₹60; C: ₹100; and D: ₹300. Prepare a statement showing product wise 'cost' and 'offer price'.

Ans:

		Products			
		A	B	C	D
Cost per unit (₹)		56	108	180	420
Offer price (₹)		67.20	129.60	216	504

In a manufacturing company, a product passes through five operations. The output of the fifth operation for a period are as under:

Operation for a period	Input (units)	Rejection (units)	Output (units)	Labour and overhead ₹
1	21,600	5,400	16,200	1,94,400
2	20,250	1,350	18,900	1,41,750
3	18,900	1,350	17,550	2,45,700
4	23,400	1,800	21,600	1,40,400
5	17,280	2,880	14,440	86,400

You are required to:

- (a) Determine the labour and overhead cost at each operation for one unit of the final output and the total labour and overhead cost of all operations for one unit of the final output. (CA, Inter)

Ans:

	Operations				
	1	2	3	4	5
(i) Input required (units)	2.00	1.50	1.40	1.30	1.20
(ii) Labour and overhead per unit of output (₹)	18.00	10.50	18.20	7.80	6.00

Contract Costing

1. An expenditure of ₹1,94,000 has been incurred on a contract to the end of 31st March, 2000. The value of work certified is ₹2,20,000. The cost of work done but not yet certified is ₹6,000. It is estimated that the contract will be completed by 30th June, 2000 and an additional expenditure of ₹40,000 will have to be incurred to complete the contract. The total estimated expenditure on the contract is to include a provision of $2\frac{1}{2}\%$ for contingencies. The contract price is ₹2,80,000 and ₹2,00,000 has been realised in cash upto 31st March, 2000. Calculate the proportion of profit to be taken to the Profit and Loss Account as on 31st March, 2000 under different methods.

(B. Com. (Hons), Delhi 2000)

Ans: Total notional profit ₹32,000;
Profit to be taken to P and L A/c

(a) ₹31,546.42 (b) using conservative method ₹28678.57

2. SV Construction Ltd. have obtained a contract for construction of a bridge. The value of the contract is ₹12 lakhs and the work commenced on 1st October, 2012. The following details are shown in their books for the year ending 30th September 2013.

	₹
Plant purchased	60,000
Wages paid	3,40,000
Material issued to site	3,36,000
Direct expenses	8,000

(Contd.)

- General overheads apportioned 32,800
 Wages accrued as on 30.9.2013 2,800
 Materials at site as on 30.9.2013 4,800
 Direct expenses accrued as on 30.9.2013 1,200
 Work not certified at cost 14,000
 Cash received being 80% of work certified 6,00,000
- Life of plant purchased is 5 years and scrap value is nil.
1. Prepare the contract account for the year ending 30th September, 2013
 2. Show the amount of profit which you consider might be fairly taken on the contract and how you have calculated it.
- Ans:* Profit taken to Profit and Loss A/c ₹19,200.
9. The following particulars relate to a contract account of Ajit Engineers.
- | | |
|---|----------|
| Material sent to site | ₹ 85,349 |
| Labour | 74,375 |
| Plant | 15,000 |
| Direct expenses | 3,167 |
| Establishment charges | 4,126 |
| Material returned to store | 549 |
| Work certified | 1,95,000 |
| Work not certified | 4,500 |
| Material in hand at the end of the year | 1,883 |
| Wages accrued | 2,400 |
| Direct expenditure incurred | 240 |
| Value of plant at the end of the year | 11,000 |
| Contract price | 2,50,000 |
| Cash received | 1,80,000 |
- You are required to prepare:
- (i) Contract A/c showing profit transferred to Profit & Loss A/c and
 - (ii) Contractee A/c
10. An amount of ₹19,80,000 was incurred on a contract work up to 31.03.2004. Certificates have been received to date to the value of ₹24,00,000 against which ₹21,60,000 has been received in cash. The cost of work done but not certified amounted to ₹45,000. It is estimated that by spending an additional amount of ₹1,20,000 (including provision for contingencies) the work can be completed in all respects in another two months. The agreed contract price of the work is ₹25 lakhs. Compute a conservative estimate of the profit to be taken to the Profit and Loss Account.
- Ans:* Notional profit ₹23,275
11. The following is the contract price
- | | |
|-----------------|----------|
| Contract price | 32,800 |
| Contractee's ac | 74,375 |
| Buildings | 15,000 |
| Creditors | 3,167 |
| Bank balance | 4,126 |
| Capital account | 549 |
| Materials | 1,95,000 |
| Wages | 4,500 |
| Expenses | 1,883 |
| Plant | 2,400 |
- The work on sent to the site were paid due with a cost of Materials of The contract price was 80 depreciated. Prepare Contract account for December,
12. The following is Contract No. 10-
- | | |
|-----------------|----------|
| Contract price | 32,800 |
| Contractee's ac | 74,375 |
| Buildings | 15,000 |
| Creditors | 3,167 |
| Bank balance | 4,126 |
| Capital account | 549 |
| Materials | 1,95,000 |
| Wages | 4,500 |
| Expenses | 1,883 |
| Plant | 2,400 |

(CWA, Inter, Stage I, Dec 2004)

(CWA, Inter, Stage I, Dec 2004)

13. AKP Build Actual exq April 1, 2004

The following is the summarised information relating to contract accounts number 100:

	₹
Contract price	6,00,000
Wages	1,64,000
General expenses	8,600
Materials	1,20,000
Materials received (80% of certified work)	2,40,000
Cash received	10,000
Materials at site	20,000

plant included in the above information are wages ₹3,500, materials ₹4,000 and other expenses ₹2,500 which were incurred since certification. Depreciate plant at 10%. Prepare contract A/c (B.Com. (Hons), Delhi, 2004)

Ans: Profit transferred to Profit and Loss A/c, ₹13,547

12. The following is the trial balance of Premier Construction Company engaged on the execution of Contract No. 1047 for the year 31st Dec., 2012:

	₹
Contractee's account (amount received)	3,00,000
Buildings	1,60,000
Creditors	72,000
Bank balance	35,000
Capital account	5,00,000
Materials	2,00,000
Wages	1,80,000
Expenses	47,000
Plant	2,50,000
	<u>8,72,000</u>

The work on contract 1047 was commenced on 1st January 2012. Material costing ₹1,70,000 were sent to the site of the contract but those of ₹6,000 were destroyed in an accident. Wages of ₹1,80,000 were paid during the year. Plant costing ₹50,000 was used on the contract all through the year. Plant with a cost of ₹2 lakhs was used from 1st January to 30th September and was then returned to stores.

Materials of the cost of ₹4,000 were at site on 31st December, 2012. The contract was for ₹6,00,000 and the contractor pays 75% of the work certified. Work certified was 80% of the total contract work at the end of 2012. Uncertified work was estimated at ₹15,000 on 31st December, 2012. Expenses are charged to contract at 25% of wages. Plant is to be depreciated at 10% p.a.

Prepare Contract No. 1047 account for the year 2012 and make out the Balance Sheet as on 31st December, 2012 in the books of Premier Construction Company.

Ans: (B.Com. (Hons), Delhi, 2006 Adapted)

13. AKP Builders Ltd. commenced a contract on April 1, 2011. The total contract was for ₹5,00,000.

Actual expenditure for the period April 1, 2011 to March 31, 2012 and estimated expenditure for April 1, 2012 to December 31, 2012 are given below:

B/s total ₹6,04,000

	2011–12 (Actuals)	2012–13 (9 months) (Estimated)
Material issued	90,000	85,750
Labour: paid	75,000	87,325
Outstanding at the end	6,250	8,300
Plant	25,000	—
Sundry expenses: Paid	7,250	6,875
Prepaid at the end	625	—
Establishment charges	14,625	—

A part of the material was unsuitable and was sold for ₹18,125 (Cost being ₹15,000) and a part of plant was scrapped and disposed of for ₹2,875. The value of plant at site on 31 March, 2012 was ₹7,750 and the value of material at site was ₹4,250. Cash received on account to date was ₹17,500 representing 80% of the work certified. The cost of work uncertified was valued at ₹27,375. The contractor estimated further expenditure that would be incurred in completion of the contract:

- The contract would be completed by 31st December, 2012.
- A further sum of ₹31,250 would have to be spent on the plant and the residual value of the plant on the completion of the contract would be ₹3,750.
- Establishment charges would cost the same amount per month as in the previous year.
- ₹10,800 would be sufficient to provide for contingencies.

Required:

Prepare contract account and calculate estimated total profit on this contract. Profit transferable to Profit and Loss account is to be calculated by reducing estimated Profit in proportion of work certified and contract price.

Ans: Profit taken to Profit and Loss A/c, ₹29,603.55

14. Pioneer Construction Company Ltd. obtained a contract for the erection of a multi-storey building

Building operations started in July 2012. The contract price was ₹9,00,000. On 30th June 2013, the end of the financial year, the cash received on account was ₹3,60,000, being 80% of the amount on the surveyor's certificate.

The following additional information is given:

	₹
Materials issued to contract	1,80,000
Materials on hand at site as on 30th June 2013	7,500
Wages	2,46,600
Plant purchased specially for contract and to be depreciated at 10% per annum	30,000
Direct expenses incurred	12,900
General overhead allocated to contract	7,600
Work finished but not yet certified: cost	15,000

You are required to prepare the contract account and statement showing the profit on the contract to 30th June 2013, indicating what proportion of the profit the company would be justified in taking to the credit of the profit and loss account, and to show what entries in respect of the contract would appear in the balance sheet.

Ans: Profit taken to P & L A/c ₹ 11,946

	Balance Sheet	₹
Plant	27,000	
WIP	1,02,046	

2012-13
(Estimated monthly)
85,750
87,325
8,306
6,875

Materials issued		2012	2013
Direct wages	3,00,000	84,000	₹
Direct expenses	2,30,000	1,05,000	
Indirect expenses	22,000	10,000	
Work certified	6,000	1,400	
Work uncertified	7,50,000	10,00,000	
Materials at site	8,000	—	
Plant issued	5,000	7,000	
Cash recd. from contractor	14,000	2,000	
on of work certified to date was ₹1,75,000	6,00,000	10,00,000	
1 March, 2012 and a part of the contract			
date was ₹1,75,000			
at ₹27,375,000			
it transferable to			
on of work certified to date was ₹1,75,000			
1 June 2013, the amount on			
the amount on			
₹	Dr. (₹)	Cr. (₹)	
Paid up share capital		1,00,000	
Cash received on account of contract (80% of work certified A/C, ₹29,960.55	1,20,000		
Land and buildings	30,000		
Machinery at cost (75% at site)	40,000		
Bank	4,000		
Materials at site	40,000		
Direct labour	55,000		
Expenses at site	2,000		
Lorries and vehicles	30,000		
Furniture	1,000		
Office equipment	10,000		
Postage and telegrams	500		
Office expenses	2,000		
Rates and taxes	3,000		
Fuel and power	2,500		
	2,20,000	2,20,000	

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contract would

The contract price is ₹3,00,000 and work certified is ₹1,50,000. The work completed 'since certification' is estimated at ₹1,000 (at cost). Machinery costing ₹2,000 was returned to stores at the end of the year. Stock of materials at site on 31.12.2001 was of the value of ₹5,000. Wages outstanding were ₹200. Depreciation on machinery at 10%.

You are required to calculate the profit from the contract and show how the work-in-progress will appear in the balance sheet as on 31.12.2012.

Ans: Profit taken to Profit and Loss A/c ₹28,427

Ans: Amount shown in Balance Sheet ₹6,127

15. The following information relates to a building contract for ₹10,00,000.

Job, Contract and Batch Costing

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16. Alcon Construction Company Ltd. commenced its business of construction on 1.1.2012. The trial balance as on 31.12.2012 showed the following balances:

Ans: Profit taken to Profit and Loss account 2012, ₹1,05,600; 2013, ₹1,32,000
(B. Com. (Hons), Delhi)

The value of plant at the end of 2012 and 2013 was ₹7,000 and ₹5,000 respectively.

Prepare: (i) the contract account, and (ii) contractor account for two years 2012 and 2013 taking into consideration such profit for transfer to the profit and loss account as you think proper.

17. The PQR Co. Ltd. undertakes to build a cooling tower at a contract price of ₹6,75,000. It is estimated that it will take two years to complete, and work is commenced on 1st May 2012. The company year ended on 30th September, and on that date, in 2013 the position of the contract was as follows:

Certificates to Sept. 15, 2013
Less: 10% retention

Add: Extra work over contract as agreed
Last time
This time

Less: Cash paid on account

Amount now due (and paid Oct. 24, 2013)

Expenditure on the contract was as follows:

Materials sent by suppliers direct to site

Materials sent from plant and stores yard

Wages

Haulage of plant

Expenses incurred on contract

Establishment charges apportioned to contract

On 30th September 2013 it is estimated that materials on site amounted to ₹3,050.

During the contract, plant to the value of ₹35,000 was transferred from the site. The plant remaining on site at 30th September was valued at ₹22,000.

The amount of work done (at cost) between the date of the last certificate and the end of the financial year was estimated as ₹10,250.

PQR Co. Ltd. are careful as to the amount of profit to be taken on uncompleted contracts, and as only a few months' work had been done at 30th September 2012 no profit at all was then taken.

- (a) You are required, supposing the company were to take credit for profit on the contract, to:
- Calculate the amount that you consider may be fairly taken into the firm's accounts at 30th September 2013;
 - Calculate the work-in-progress figure. How would this new figure be shown in the balance sheet of PQR Co. Ltd.?

(b) Show the Contract Account in the firm's costing ledger to record the above facts.

*Ans. Profit taken to Profit and Loss A/c ₹65,240
Work in Progress ₹4,39,190*

18. A contractor has entered into a long-term contract at an agreed price of ₹1,75,000 subject to an escalation clause for materials and wages as spelt out in the contract and corresponding actual as follows:

Materials	Standard	Actual
A	5,000 kg. @ ₹5/-	5,050 kg. @ ₹4.80
B	3,500 kg. @ ₹8/-	3,450 kg. @ ₹7.90
C	2,500 lt. @ ₹6/-	2,600 lt. @ ₹6.60
Wages:		
P	2,000 hr. @ ₹7/-	2,100 hr. ₹@ 7.20
Q	2,500 hr. @ ₹7.50/-	2,450 hr. ₹@ 7.50
R	3,000 hr. @ ₹6.50/-	3,100 hr. ₹@ 6.60

It is estimated that the rates have increased by 10% for materials and 5% for wages.

reckoning the full actual consumption of materials and wages, the company has claimed a final price of ₹1,77,360. Give your analysis of the admissible escalation claim and indicate the final price payable.

Batch Costing

Ans: Final price payable ₹1,75,850

Component SW-10X is made entirely in machine shop No. ASW II. Material cost is ₹20 per component. Each component takes 6 minutes to produce and the machine operator is paid ₹15 per hour. Machine-hour rate is ₹72 per hour. The setting up of the machine to produce the equipment takes 3 hours for the operator.

You are required to prepare cost sheets cost sheets showing the setting-up costs and the production costs, (b) 150 components and (c) 200 components, assuming a batch size of (a) 100 components, (b) 150 components and (c) 200 components.

Ans:

	Batch Size		
Total cost (₹)	100	150	200
	3,131	4,566	6,301

All Play and No. Work Ltd. are specialists in the manufacture of sports goods. They manufacture croquet mallets but purchase the wooden balls, iron arches and stakes required to complete a croquet set.

Mallets consist of a head and handle. The handle uses 1.5 board feet per handle at ₹40 per board foot. The spoilage loss is negligible for manufacture of handles. Heads frequently split and create considerable scrap. A head requires 0.20 board feet of high quality lumber costing ₹70 per board foot. Spoilage normally works out to 20% of the completed heads. 4% of the spoiled heads can be salvaged and sold as scrap at ₹10 per spoiled head.

In the department, machining and assembling the mallets, 12 men work 8 hours per day for 25 days in a month. Each worker can machine and assemble 15 mallets per uninterrupted 50 minutes time frame. In each 8-hour working day, 15 minutes are allowed for coffee-break, 8 minutes on an average for training, and 9 minutes for supervisory instructions. Besides 10% of each day is booked as idle time to cover checking in and checking out, changing operations, getting material and other miscellaneous matters. Workers are paid at a comprehensive rate of ₹6 per hour.

The department is geared to produce 40,000 mallets per month and the normally expenses of the department are as under:

	₹
Finishing and painting the mallets	50,800
Lubricating oil for cutting machines	300
Depreciation for cutting machines	700
Repairs and maintenance	100
Power to run the machines	200
Plant manager's salary	2,700
Other overheads allocated to the department	1,20,000

As the mallets are machined and assembled in lots of 500, prepare a total cost sheet for one lot and advise the management on the selling price to be fixed per mallet in order to ensure a minimum of 20% margin on selling price.

Ans: Selling price to be fixed at ₹1,02,292