CHAPTER-10

PROCESS AND OPERATION COSTING

Q1. **[SMN1]**From the following data, prepare process accounts indicating the cost of each process and the total cost. The total units that pass through each process were 240 for the period.

	Process I(Rs.)	Process II(Rs.)	Process III(Rs.)
Materials	1,50,000	50,000	20,000
Labour	80,000	2,00,000	60,000
Other expenses	26,000	72,000	25,000

Indirect expenses amounting to Rs. 85,000 may be apportioned on the basis of wages. There was no opening or closing stock.

Q2. **[SMN2]**A product passes through three processes. The output of each process is treated as the rawmaterialofthenextprocesstowhichitistransferredandoutputofthethirdprocess is transferred to finished stock.

	Process-I(Rs.)	Process-II(Rs.)	Process-III(Rs.)
Materials issued	40,000	20,000	10,000
Labour	6,000	4,000	1,000
Manufacturing overhead	10,000	10,000	15,000

10,000 units have been issued to the Process-I and after processing, the output of each process is as under:

Process	Output	Normal Loss
Process-I	9,750 units	2%
Process-II	9,400 units	5%
Process-III	8,000 units	10%

No stock of materials or of work-in-process was left at the end. Calculate the cost of the finished articles.

Q3. **(A10).**Product 'Z' is obtained after it passes through three distinct processes. The following information is obtained from the accounts for the month ending December 31, 20X1:

Items	Total	Process I	Process II	Process III
	Rs	Rs	Rs	Rs
Direct Materials	7,542	2,600	1,980	2,962
Direct Wages	9,000	2,000	3,000	4,000
Production Overheads	9,000	---	---	---

1,000 units @ Rs 3 each were introduced to process I. There was no stock, materials or work- in-progress at the beginning or end of the period. The output of each process passes direct to the next process and finally to finished stores. Production overheads are recovered on the basis of direct wages. The following additional data is obtained:

Process	Output during the month	Percentage of Normal loss to input	Value of scrap per unit Rs
Process I	950	5%	2
Process II	840	10%	4
Process III	750	15%	5

The company's policy is to fix the selling price of end product is such a way as to yield a profit of 20% on selling price.

Required:

(a) Prepare the Process accounts and Normal Loss, Abnormal Gain or Loss Accounts
(b) Determine the selling price per unit of the end product.
(c) Prepare costing P & L Account. **[INTER/M19/2(B) & INTER/M18/(B)Similar]**

Q4. **[SMN3]**RST Limited processes Product Z through two distinct processes – Process- I and Process-II. On completion, it is transferred to finished stock. From the following information for the year 20X1-X2, prepare Process- I, Process- II Finished Stock A/c and income statement :

Particulars	Process- I	Process- II
Raw materials used	7,500 units	--
Raw materials cost per unit	Rs. 60	--
Transfer to next process/finished stock	7,050 units	6,525 units
Normal loss (on inputs)	5%	10%
Direct wages	Rs. 1,35,750	Rs. 1,29,250
Direct Expenses	60% of Direct wages	65% of Direct wages
Manufacturing overheads	20% of Direct wages	15% of Direct wages
Realisable value of scrap per unit	Rs. 12.50	Rs. 37.50

6,000 units of finished goods were sold at a profit of 15% on cost. Assume that there was no opening or closing stock of work-in-process. **[INTER/N19/4(B)-Similar]**

Q5. **(C10N).**A toothpowder manufacturer produces bulk quantities of toothpowder from two raw material A and B. Material A is introduced into Process I from which the output goes to Process II Where material B is introduced. During March 2010, the company purchased 80,000 kg of material A which was introduced into Process I. The production details of Process I and Cost are as follows:

Material A purchased : 80,000 kg @ Rs. 6 per kg
Processing cost (excluding labour) : 63 hours @ Rs. 30 per hour
Labour cost : Rs. 80 per hour
Standard yield : 90 percent of input
General Overhead recovered at 125 percentage of labour cost.
Waste from this process sold at Re. 1.50 per kg
The actual output from this process was 70,000 kg which was transferred to Process II.
The Company in process II used 70,000 kg output of Process I together with 30,000 kg of material B purchased. The production details and of Process II costs are as follows:
Materials B purchased : 30,000 kg @ Rs. 2 per kg
Processing cost (excluding labour) : 45 hour @ Rs. 20 per hour
Labour cost : Rs.40 per hour
Standard yield : 95 percent of input
General overhead recovered at 50 percentage of labour cost
Waste from this process sold at Re.1.00 per kg
The actual output of Process II was 96,000 kg which was transferred to Finished Stock
There was an inquiry for a quantity of 1700 kg of specially prepared waste material from process I. This material would have to be specially processed and packed incurring the following cost:
Processing : Re. 0.90 per kg
Packaging : Re. 0.40 per kg
This specially prepared waste incurs no process loss and could be entirely sold for Rs. 3.20 per kg.
You are required to:

1. Record the information in the process cost accounts, before the inquiry was received and show the overall profit or loss transferred to the profit and loss account from the abnormal gains or losses in processing:
2. Advise the management on whether or not they should produce 1700 kg of specially processed waste material from Process I and the effect on the overall results of the Company.

[CA (PE II) May 2010]

Q6. **(C11N).**A product passes through two processes A and B during the year 2011, the input to process A of basic raw material was 8,000 units @ Rs. 9 per unit. Other information for the year is as follows:

	Process A	Process B
Output units	7,500	4,800
Normal Loss (% to input)	5%	10%
Scrap Value per unit (Rs.)	2	10
Direct wages (Rs.)	12,000	24,000
Direct expenses (Rs.)	6,000	5,000
Selling Price per unit (Rs.)	15	25

Total overheads Rs. 17,400 were recovered as percentage of direct wages. Selling expenses were Rs. 5,000.These are not allocate to the processes. 2/3 of the output of Process A was passed on to the next process and the balance was sold. The entire output of Process B was sold.

Required: Prepare Process A and B Accounts. **[IPCC (May 2012), IPC/N19/2(A)]-Similar]**

Q7. The following are the details in respect to Process A and Process B of a processing factory :

	Process A (Rs.)	**Process B (Rs.)**
Materials	40,000	--
Labour	40,000	56,000
Overheads	16,000	40,000

The output of Process A is transferred to Process B at a price calculated to give a profit of 20% on the transfer price and the output of Process B is charged to finished stock at a profit of 25% on the transfer price. The finished stock department realized Rs. 4,00,000 for the finished goods received from Process B.

PREPARE process accounts and CALCULATE total profit, assuming that there was no opening or closing work-in-progress. **[MTP-MAR18/1(A)][M-5]**

Q8. The following details are extracted from the costing records of an oil refinery for the week ended 30th September, 2010.

Purchase of 1000 tonnes of copra Rs. 4,00,000.

	Crushing plant Rs.	**Refinery plant Rs.**	**Finishing Rs.**
Cost of labour	5,000	2,000	3,000
Electric power	1,200	7,20	4,80
Sundry material	200	4,000	---
Repairs to machinery and plant	5,60	6,60	2,80
Steam	1,200	9,00	900
Factory expenses	2,640	1,320	4,40
Cost of container	---	---	15,000

600 tones of crude oil was produced.

500 tonnes of oil was produced by refining process.

496 tonnes of refined oil was finished for delivery.

Copra sack sold Rs. 800.

350 tonnes of copra residue sold Rs. 22,000.

Loss in weight in crushing 50 tonnes.

90 tonnes by-product was obtained from refining process valued at Rs. 13,500. You are required to show the accounts in respect of each of the following stages of manufacture for the purpose of arriving at the cost per tonne of each process and also the total cost per tonne of finished oil.

(a) Copra crushing process; (b) Refining process; (c) Finishing process. **[R-N-10/9]**

Q9. **(C4).**The input to a purifying process was 16,000 kgs. Of basic material purchased @ Rs. 1.20 per kg. Process wages amounted to Rs. 720 and overheads were applied @ 240% of the labour cost. Indirect materials of negligible weight were introduced into the process at a cost of Rs. 336. The actual output from the process weighed 15,000 kgs. The normal yield of the process is 92%. Any difference in weight between the input of basic material and output of purified material (product) is sold @ Re.0.50 per kg. The process is operated under a licence which provides for the payment of royalty @ Re. 0.15 per kg. of the purified material produced.

Required : Prepare : (i) Purifying process account (ii) Normal wastage account (iii) Abnormal wastage yield account , and (iv) Royalty payable account. **[CA]**

INTER PROCESS

Q10. **[SMN1]** From the following data, prepare process accounts indicating the cost of each process and the total cost. The total units that pass through each process were 240 for the period.

	Process I (Rs.)	Process II (Rs.)	Process III (Rs.)
Materials	1,50,000	50,000	20,000
Labour	80,000	2,00,000	60,000
Other expenses	26,000	72,000	25,000

Indirect expenses amounting to Rs.85,000 may be apportioned on the basis of wages. There was no opening or closing stock..

Q11. **(SMN6/A11).**A Ltd. produces Product 'AXE' which passes through two processes before it is completed and transferred to finished stock. The following data relate to Jan. 20X6:

	Process		Finished Stock
Particulars	**I**	**II**	
	Rs.	**Rs.**	**Rs.**
Opening stock	7,500	9,000	22,500
Direct materials	15,000	15,750	
Direct wages	11,200	11,250	
Factory overheads	10,500	4,500	
Closing stock	3,700	4,500	11,250
Inter-process profit included in opening stock	---	1,500	8,250

Output of Process I is transferred to Process II at 25% profit on the transfer price.

Output of Process II is transferred to finished stock at 20% profit on the transfer price. Stocks in process are valued at prime cost. Finished stock is valued at the price at which it is received from the process II. Sales during the period are Rs. 1,40,000.

Required: Prepare process cost accounts and finished goods account showing the profit element at each stage. **[INTER/M19/2(B)-SIMILAR]**

Q12. **(B16(5).**Product A passes through three processes before it is transferred to finished stock. The following information is obtained for the month of July:

	Process I	Process II	Process III	Finished
	Rs Rs.	Rs.	stock Rs.	
Opening stock	5,000	8,000	10,000	20,000
Direct materials	40,000	12,000	15,000	
Direct wages	35,000	40,000	35,000	
Manufacturing overheads	20,000	24,000	20,000	
Closing stock	10,000	4,000	15,000	30,000
Profit % on transfer price to next process	25%	20%	10%	
Inter-process profit for opening stock	—	1,395	2,690	6,534

Stocks in processes are valued at prime cost. Sales during the period were Rs 4,00,000.

Required: Prepare and compute: (a) Process Cost Accounts showing profit element at each stage; (b) Actual realised profit, and (c) Stock valuation for Balance Sheet purposes (d) Also show actual realised profit with the help of P/L Account. **[ICAI-M17/2(A)]**

Q13. KMR Ltd. produces product AY, which passes through three processes 'XM', 'YM' and 'ZM'. The output of process 'XM' and 'YM' is transferred to next process at cost plus 20 percenteachontransferpriceandtheoutputofprocess'ZM'istransferredtofinished stock at a profit of 25 percent on transfer price. The following information are available in respect of the year ending 31st March, 2017:

	Process- XM (Rs.)	**Process- YM (Rs.)**	**Process- ZM (Rs.)**	**Finished Stock (Rs.)**
Opening Stock	30,000	54,000	80,000	90,000
Material	1,60,000	1,30,000	1,00,000	-
Wages	2,50,000	2,16,000	1,84,000	-
Manufacturing Overheads	1,92,000	1,44,000	1,33,000	-
Closing Stock	40,000	64,000	78,000	1,00,000
Inter process profit included in Opening Stock	Nil	8,000	20,000	40,000

Stock in processes is valued at prime cost. The finished stock is valued at the price at which it is received from process 'ZM'. Sales of the finished stock during the period was Rs. 28,00,000.

You are required to prepare:

(i) All process accounts and

(ii) Finished stock account showing profit element at each stage. **[ICAI-M17/2(A)]**

ADDITIONAL QUESTIONS FOR PRACTICE

Q14. **(A13(14).**A product passes through three processes A, B and C, 10,000 units at a cost of Re. 1 were issued to process A. The other direct expenses were:

	Process A Rs	Process B Rs	Process C Rs
Sundry Materials	1,000	1,500	1 480
Direct Labour	5,000	8,000	6,500
Direct Expenses	1,050	1,188	1,605

The wastage of Process A was 5% and Process B 4%. The wastage of Process A was sold at Re 0.25 per unit and that of B at Re. 0.50 per unit and that of C at Re. 1.00 per unit. The overhead charges were 168% of direct labour. The final product was sold at Rs 10.00 per unit, fetching a profit of 20% on sales.

Required: Find the percentage of wastage in Process C.

Q15. **(A13N)**The Product Z of Tulsian (2) Ltd. passes through two processes A and B.

Following is the information relating to both the processes:

Particulars	Process A	Process B
Material in tonnes	1000	300
Cost of Materials per tonne	Rs. 125	Rs. 200
Direct Wages	Rs. 28,800	Rs. 11,160
Production Overheads	25% of Direct Wages	25% of Direct wages
Output in tonnes	810	780
Normal wastage / Loss in weight	5% of input	5% of input
Normal Scrap	10% of input	10% of input
Realizable Value of Normal Scrap / tonne	Rs. 80 To yield profit @ 20%	Rs. 200 To yield Profit @ 1/6
Selling Price per tonne	On Sales	On sales
Opening Finished Processed Stock	90 tonnes @ Rs. 380	120 tonnes @ Rs. 380

Two –third of process A stock is transferred to Process B and one-third of the balance stock is sold.
Two-third of the process B Stock is sold.
Management Expenses – Rs. 7,450. Selling expenses – Rs. 20 per tonne sold.
Stock are valued and transferred to subsequent process at Weighted Average Cost.
There was no opening or closing stock of work in progress in any process.
Required: Prepare Process Accounts, Process Stock Accounts, Profit & Loss Account, Abnormal Loss / Gain Account and Normal Loss Account.

Q16. **(A18(N).**In a manufacturing company, a product X passes through 4 operations. The output of the 4th operation becomes the finished product .The input rejection, output, labour and overhead of each operation for a period are as under:

Operation No.	Input (units)	Rejection (units)	Output (Units)	Labour and Overhead (Rs.)
1	21,600	5,400	16,200	2,16,000
2	20,250	4,050	16,200	4,05,000
3	18,900	3,150	15,750	5,67,000
4	23,320	2,120	21,200	9,32,800

You are required to:

(i) Determine the input required in each operation for one unit of final output
(ii) Calculate the labour overhead cost at each operation for one unit of final output and the total labour and overhead cost of all operations for one unit a final output
(iii) Calculate the cost of Raw Material to produce one unit of finished product when the weight of the finished product is 10 gms and the price of the raw material is Rs. 500 per kg.
(iv) Calculate the total cost of producing one unit of finished product.
(v) Calculate the capacity of different operation plants to hold materials if (a) 20% of space is to be allowed for chemical reaction and (b) final output from operation 4 is expected to be 5 tons.

Q17. **(C2).**The product X is processed by passing the chemical C through four processes where the output of the earlier process becomes the input of the subsequent process. The loss of materials expressed as percentage of input is as follows:

Process I : 20%, II : 10%, III : 16.66, IV : 8.33. The material lost in each process does not have any resale value.

Calculate : (a) The cost per Kg. of product X if the cost of chemical 'C' is Rs. 8 per Kg. and (b) the capacity of the process plants for process I ,II ,III and IV to hold the material for process expressed in metric tones of input for each process:

If two conditions are to be fulfilled ,viz,- (i) 20% of the space is to be allowed for chemical reactions , and (ii) the output of product X from the final process (Process IV) is expected to be 5 metric tones.

[CA]

Q18. **(C3).**In a manufacturing unit, raw material has to pass through four successive operations to reach the finished product stage. The loss in operation II, III and IV are 16.66 %, 20% , 16.66% of the input respectively. Cost of raw material required to produce 8,000 units of finished product Rs. 43,200. Weight of one unit of finished product is 0.10 kg. The price of raw material is Rs. 20 per kg. Calculate the loss in operation I as percentage of output. **[CA]**

VALUATION OF WORK-IN-PROCESS

PROCESS - I ACCOUNT

(Closing WIP – FIFO)

Q19. **(A2).**From the following information prepare: (a) Statement of Equivalent Production; (b) Statement of Cost per Equivalent Unit; (c) Statement of Evaluation; (d) Process Account:

1. Input of materials: 10,000 units
2. Current cost incurred in Process:

Material	Rs. 40,000
Labour	Rs. 17,700
Overheads	Rs. 8,250

3. Normal loss: 8% of total input [i.e., opening WIP + units put in]
4. Scrap realised @ Rs. 40 per 10 units
5. Closing work-in-progress: 900 units
6. Transfer to next process: 7,900 units
7. Degree of completion:-

	Closing stock (%)	Scrapped units (%)
Material	100	100
Labour	70	80
Overheads	30	20

8. Method of valuation: FIFO

Q20. **(A3).**From the following information prepare: (a) Statement of Equivalent Production; (b) Statement of Cost per Equivalent Unit; (c) Statement of Evaluation; (d) Process Account:

1. Input of materials: 10,000 units
2. Current cost incurred in Process:

Material	Rs. 40,000
Labour	Rs. 17,860
Overheads	Rs. 8,570

3. Normal loss: 8% of total input [i.e., opening WIP + units put in]
4. Scrap realised @ Rs. 40 per 10 units
5. Closing work-in-progress: 900 units
6. Transfer to next process: 8,700 units
7. Degree of completion:-

	Closing stock (%)
Material	100
Labour	70
Overheads	30

8. Method of valuation: FIFO

(Opening and Closing WIP – FIFO)

Q21. **[SMN4]** Opening work-in-process 1,000 units (60% complete); Cost Rs.1,10,000. Units introduced during the period 10,000 units; Cost Rs.19,30,000. Transferred to next process - 9,000 units. Closing work-in-process - 800 units (75% complete). Normal loss is estimated at 10% of total input including units in process at the beginning. Scraps realise Rs.10 per unit. Scraps are 100% complete. Using FIFO method, compute equivalent production and cost per equivalent unit. Also evaluate the output.

Q22. **[SMP1]** Following information is available regarding Process-I for the month of February, 20X5:

Production Record:	
Units in process as on 1.2.20X5	
(All materials used, 25% complete for labour and overhead)	4,000
New units introduced	16,000
Units completed	14,000
Units in process as on 28.2.20X5	
(All materials used, 33-1/3% complete for labour and overhead)	6,000
Cost Records:	
Work-in-process as on 1.2.20X5	(Rs.)
Materials	6,000
Labour	1,000
Overhead	1,000
	8,000
Cost during the month	
Materials	25,600
Labour	15,000
Overhead	15,000
	55,600

Presuming that average method of inventory is used, prepare:

(i) Statement of equivalent production.
(ii) Statement showing cost for each element.
(iii) Statement of apportionment of cost.
(iv) Process cost account for Process-I. **[R-M-19/8]**

Q23. **(A4).**From the following information prepare: (a) Statement of Equivalent Production; (b) Statement of Cost per Equivalent Unit; (c) Statement of Evaluation; (d) Process Account:

1. Opening work-in-progress : 800 units valued as under:

   Material Rs. 3,200, Labour Rs. 960, Overheads Rs. 320
2. Input of materials: 9,200 units
3. Current cost incurred in Process: Material Rs. 36,800; Labour Rs. 16,740; Overheads Rs. 7,930
4. Normal loss: 8% of total input [i.e., opening WIP + units put in]
5. Scrap realised @ Rs. 40 per 10 units
6. Closing work-in-progress: 900 units
7. Transfer to next process: 7,900 units
8. Degree of completion:-

	Opening stock (%)	Closing stock (%)	Scrapped units (%)
Material	100	100	100
Labour	60	70	80
Overheads	40	30	20

9. Method of valuation: FIFO

Q24. **(A5).**From the following information prepare: (a) Statement of Equivalent Production; (b) Statement of Cost per Equivalent Unit; (c) Statement of Evaluation; (d) Process Account:

1. Opening work-in-progress : 800 units valued as under:
   Material Rs. 3,200, Labour Rs. 960, Overheads Rs. 320
2. Input of materials: 9,200 units
3. Current cost incurred in Process:

Material	Rs. 36,800
Labour	Rs. 16,900
Overheads	Rs. 8,250

4. Normal loss: 8% of total input [i.e., opening WIP + units put in]
5. Scrap realised @ Rs. 40 per 10 units
6. Closing work-in-progress: 900 units
7. Transfer to next process: 8,700 units
8. Degree of completion:-

	Opening stock (%)	Closing stock (%)
Material	100	100
Labour	60	70
Overheads	40	30

9. Method of valuation: FIFO **[MTP-APR 19/3(a)-Similar]**

Q25. **(SM).** Opening work-in-progress 1,000 units (60% complete); Cost Rs. 1,100, Units introduced during the period 10,000 units; Cost Rs. 19,300, Transferred to next process - 9,000 Units.
Closing work-in-progress - 800 units (75% complete). Normal loss is estimated at 10% of total input including units in process at the beginning. Scrap realize Rs. 1 per unit, Scraps are 100% complete. Compute equivalent production and cost per equivalent unit. Also evaluate the output.

Q26(PM). Following informal ion is available regarding Process A for the month of October 2013:

Production Record:

(i)	Opening work-in progress	40,000 Units
	(Material: 100% complete, 25% complete for labour & overheads)	
(ii)	Units Introduced	1,80,000 Units
(iii)	Units Completed	1,50,000 Units
(iv)	Units in-process on 31,10,2013	70,000 Units
	(Material: 100% complete, 50% complete for labour & overheads)	

Cost Record:	**(Rs.)**
Opening Work-in-progress:	
Material	1,00,000
Labour	25,000
Overheads	45,000
Cost incurred during the month:	
Material	6,60,000
Labour	5,55,000
Overheads	9,25,000

Assure that FIFO method is used for W.I.P. inventory valuation.

Required:

(i) Statement of Equivalent Production
(ii) Statement showing Cost for each element
(iii) Statement of apportionment of Cost
(iv) Process- A Account **[R-N17/6]**

Q27. Star Ltd. manufactures chemical solutions for the food processing industry. The manufacturing takes place in a number of processes and the company uses a FIFO process costing system to value work-in-process and finished goods. At the end of the last month, a fire occurred in the factory and destroyed some of the paper files containing records of the process operations for the month.

Star Ltd. needs your help to prepare the process accounts for the month during which the fire occurred. You have been able to gather some information about the month's operating activities but some of the information could not be retrieved due to the damage.The following information was salvaged:

Opening work-in-process at the beginning of the month was 800 litres, 70% complete for labour and 60% complete for overheads. Opening work-in-process was valued at Rs.26,640.

Closing work-in-process at the end of the month was 160 litres, 30% complete for labour and 20% complete for overheads.

Normal loss is 10% of input and total losses during the month were 1,800 litres partly due to the fire damage.

Output sent to finished goods warehouse was 4,200 litres.

Losses have a scrap value of Rs.15 per litre.

All raw materials are added at the commencement of the process.

The cost per equivalent unit (litre) is Rs.39 for the month made up as follows:

	Rs.
Raw Material	23
Labour	7
Overheads	9
	39

Required:

(a) Calculate the quantity (in litres) of raw material inputs during the month.

(b) Calculate the quantity (in litres) of normal loss expected from the process and the quantity (in litres) of abnormal loss / gain experienced in the month.

(c) Calculate the values of raw material, labour and overheads added to the process during the month.

(d) Prepare the process account for the month. **(R-N-15/6)[R-M18/9, IPC/N18/3(A)-Similar]**

(Opening and closing WIP – WAC)

Q28. **[SMN5]** Opening work-in-process 1,000 units (60% complete); Cost Rs.1,10,000. Units introduced during the period 10,000 units; Cost Rs.19,30,000. Transferred to next process - 9,000 units. Closing work-in-process - 800 units (75% complete). Normal loss is estimated at 10% of total input including units in process at the beginning. Scraps realise Rs.10 per unit. Scraps are 100% complete. Using Weighted Average Method, compute equivalent production and cost per equivalent unit. Also evaluate the output. **[INTER/N18/1(c)-Similar]**

Q29. **(SMP2/C8).**Following details are related to the work done in Process 'A' of XYZ Company during the month of March, 2007:

	Rs.
Opening work-in-progress (2,000 units)	
Materials	80,000
Labour	15,000
Overheads	45,000
Material introduced in Process 'A' (38,000 units)	14,80,000
Direct Labour	3,59,000
Overheads	10,77,000
Units scrapped: 3,000 units	
Degree of completion:	
Materials	100%
Labour and overheads	80%
Closing work-in-progress: 2,000 units	
Degree of Completion:	
Materials	100%
Labour and overheads	80%

Units finished and transferred to Process 'B': 35,000
Normal Loss:
5% of total input including opening work-in-progress
Scrapped units fetch Rs. 20 per piece.
You are required to prepare:
(i) Statement of equivalent production;
(ii) Statement of cost;
(iii) Statement of distribution cost; and
(iv) Process 'A' Account, Normal and Abnormal Loss Accounts.

Q30. **(C13).**The following details are available of Process X for August 2011:

(1)	Opening work-in-progress		8,000 units.
	Degree of completion and cost:		
	Material (100%)		Rs. 63,900
	Labour (60%)		Rs. 10,800
	Overheads (60%)		Rs. 5,400
(2)	Input 1,82,000 units at	Rs. 7,56,900	
(3)	Labour paid		Rs. 3,28,000
(4)	Over heads incurred		Rs. 1,64,000
(5)	Units scrapped	14,000	
	Degree of completion:		
	Material		100%
	Labour and overhead		80%
(6)	closing work-in-process	18,000 units	
	Degree of completion:		
	Material		100%
	Labour and overheads		70%
(7)	1,58,000 units were completed and transferred to next process.		
(8)	Normal loss is 8% of total input including opening work-in-process		
(9)	Scrap value is Rs. 8 per unit to the adjusted in direct material cost		

Required: You are required to compute, assuming that Average Method of Inventory is used:
(i) Equivalent Production, and (ii) Cost per unit.

[CA IPCC Nov 2011, MTP-OCT18/4(A)-Similar, IPC/M18/4(A)-Similar]

Q31. (C9/PM).ABC Limited manufactures a product 'ZX' by using the process namely RT For the month of May, 2007, the following date are available:

	Process RT
Material Introduced (units)	16,000
Transfer to next process (units)	14,400
Work in process:	
At the beginning of the month (units) (4/5 completed)	4,000
At the end of the month (units) (2/3 completed)	3,000
Cost records:	
Work in process at the beginning of the month	
	Rs.
Material	30.000
Conversion Cost	29,200
Cost during the month: materials	1,20,000
Conversion cost	1,60,800

Normal spoiled units are 10% of goods finished output transferred to next process.

Defects in these units are identified in their finished state. Material for the product is put in the process at the beginning of the cycle of operation, whereas labour and other indirect cost flow evenly over the year. It has no realizable value for spoiled units.

Required:

(i) Statement of equivalent production (Average cost method)

(ii) Statement of cost and distribution of cost;

(iii) Process accounts.

Q32. (PM). Flowing information is available regarding process A for the month of February, 2014:

Production Record:

Units in process as on 01.02.2014	4,000
(All materials used, 25% compete for labour and overhead)	
New units introduced	16,000
Units completed	14,000
Units in process as on 28.02.2014	6,000
(All materials used, 33-1/3% complete for labour and overhead)	

Cost Records:	
Work-in-process as on 01.02.2014	(Rs.)
Materials	6,000
Labour	1,000
Overhead	1,000
	8,000
Cost during the month	
Materials	25,600
Labour	15,000
Overhead	15,000
	55,600

Presuming that average method of inventory is used prepare:

(i) Statement of Equivalent Production.

(ii) Statement showing Cost for each element.

(iii)Statement of Apportionment of cost.

(iv)Process Cost Account for Process A.

Process – I ACCOUNT - LIFO

Q33. (SM). From the following information relating to the month of April 12 calculate the equivalent production units and the value of finished production and work-in-progress, using the LIFO method.

Opening work-in-progress on 1st April: 5,000 units; 50% complete.

Cost	(Rs.)
Materials	6,000
Labour	8,000
Overheads	8,000
	22,000

Units introduced into the process: 10,000

Cost	(Rs.)
Materials	30,000
Labour	52,500
Overheads	70,000
	1,52,500

During the period 7,500 units were completed and transferred to the next process. Closing work-in-progress on 30th April: 7,500 units, 50% complete.

PROCESS II ACCOUNT - FIFO

Q34. **(P25/C10/PM-Similar)**XP Ltd. furnishes you the following information relating to Process II. Prepare:

(a) Statement of Equivalent Production
(b) Statement showing Cost PEU
(c) Statement showing the cost of finished goods, abnormal loss and closing work-in-progress
(d) Process II Account and Abnormal Loss Account.

• Opening Work-in-Progress – Nil • Units introduced 42,000 units at Rs. 12 • Expenses debited to the Process: Direct Material Rs. 61,530, Labour Rs. 88,820, Overheads Rs. 1,76,400 • Finished Output = 39,500 units • Normal Loss in the process = 2% of input	• Closing work-in-progress = 1,200 units, Degree of Completion is Materials 100%, Labour 50%, Overheads 40%, • Degree of Completion of Abnormal Loss is Materials 100%, Labour 80% Overheads 60% • Units scrapped as Normal Loss were sold at Rs. 4.50 per unit. • All the units of Abnormal Loss were sold at Rs. 9 per unit.

[N 09 , M98]

Q35. **(C4/P26)** . From the following information for the month of October, 2007, prepare Process III cost accounts:

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

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

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

[R-N18/9-Similar]

Q36. **(C5/P27).**From the following information for the month ending October, 20X8, prepare Process Cost accounts for Process III Use First-in-First-out (FIFO) method to value equivalent production.

Direct materials added in Process III (Opening WIP)	2,000 units at Rs.25,750
Transfer from Process II	53,000 units at Rs.4,11,500
Transferred to process IV	48,000 units
Closing stock of Process III	5,000 units
Units scrapped	2,000 units
Direct material added in Process III	Rs.1,97,600
Direct wages	Rs. 97,600
Production Overheads	Rs. 48,800
Degree of completion:	

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

The normal loss in the process was 5% of the production and scrap was sold Rs. 3 per unit.**[R-M-16/6]**

Q37. **(C2).**The following data relate to Process Q:

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

	Degree of completion	Rs.
Materials	100%	Rs24,000
Labour	60%	Rs.14,400
Overheads	60%	Rs. 7,200

(ii) Received during the month of April from process P: 40,000 Units for Rs 1,71,000

(iii) Expenses incurred in Process Q during the month:
Material Rs.79,000; Labour Rs.1,38,230; Overheads Rs.69,120;

(iv) Closing work-in-process: 3,000 units
Degree of completion: Material 100%; Labour and Overheads 50%;

(v) Units scrapped: 4,000 units
Degree of completion: Materials 100%; Labour and Overheads 80%

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

(vii) Spoiled goods realised Rs.1.50 each

(viii) Completed units are transferred to warehouse;

Required: Prepare

(i) Equivalent units statement.

(ii) Statement of Cost per equivalent unit and total Costs.

(iii) Process Q Account

Q38. **(PM).** ABX Company Ltd provides the following information relating to Process-8:

(i) Opening Work-in-progress - NIL

(ii) Units Introduced - 45,000 units @ Rs. 10 per unit

(iii) Expenses debited to the process:

Direct material	Rs. 65,500
Labour	Rs. 90,800
Overhead	Rs. 1,80,700

(iv) Normal loss in the process - 2% of Input

(v) Work-in progress - 1800 units
Degree of completion
Material - 100%
Labour - 50%
Overhead - 40%

(vi) Finished output - 42,000 units

(vii) Degree of completion of abnormal loss:
Material - 100%
Labour - 80%
Overhead - 60%

(viii) Units scrapped as normal loss were sold at Rs. 5 per unit.

(ix) All the units of abnormal loss were sold at Rs. 2 per unit.

You are required to prepare:

(a) Statement of equivalent production.

(b) Statement showing the cost of finished goods, abnormal loss and closing balance of work-in-progress.

(c) Process-B Account and Abnormal Loss account.

PROCESS II ACCOUNT – WAC

Q39. (P32). The following data relate to Process Q –

1. Opening WIP – 4,000 units, The degree of completion and costs are as under –

Materials	Process P	Rs. 17,100
Materials	Process Q	Rs. 6,900
Labour		Rs. 14,400
Overheads		Rs. 7,200

2. Received during April from Process P: 40,000 units at a cost of Rs. 1,71,000.
3. Expenses incurred in Process Q during the month –

Materials	Rs. 79,000
Labour	Rs. 1,38,230
Overheads	Rs. 69,120

4. Closing WIP – 3,000 units, whose degree of completion was materials – 100% Labour & OH – 50%.
5. Units scrapped – 4,000 units, whose degree of completion was Materials – 100% Labour & OH – 80%
6. Normal Loss – 5% of current input
7. Spoiled goods realized Rs. 1.50 each on sale
8. Completed units are transferred to Warehouse – 37,000 units.

Prepare –

(1) Equivalent Units Statement, (2). Statement of Cost per Equivalent Unit and Total Costs,

(3) Process Q Account, and (4) Any other account that may be necessary.(M 98 Adapted)

Q40. (P33) The following information in respect of process 3 for the month of January

1. Opening Stock – 2,000 units made – up of –

Direct Material – 1	Rs. 12,350	Direct Materials – II	Rs. 13,200
Direct Labour – 1	Rs. 17,500,	Overheads	Rs. 11,000

2. Transferred from Process No. 2: 20,000 units at Rs. 1,21,100
3. Transferred to Process No. 4: 17,000 units
4. Cost incurred in Process No. 3: Direct Materials – Rs. 30,450, Direct Labour – Rs. 61,550, OH – Rs.60,200
5. Scrap: 1,000 units, - Direct Materials 100%, Direct Labour 60%, Overheads 40%
6. Normal Loss 10% of production . Scraped units realized Rs. 4 per unit.
7. Closing Stock: 4,000 units – Degree of completion: Direct Materials 80% Direct Labour 60% & OH 40%

Prepare Process No. 3 Account using Average Cost Method, along with necessary supporting statement.

Q41. **(C1).**Process 2 receives units from Process I and after carrying out work on the units transfers them to Process- 3. For the accounting period the relevant data were as follows:

Opening WIP 200 units (25% complete)	Rs.5,000
800 Units received from Process I valued at	Rs.8,600
840 units were transferred to Process 3	
Closing WIP 160 units (50% complete)	

The cost of the period were Rs.33,160 and no units were scrapped.

Required: Prepare the Process Account for Process 2 using the Average Cost method of valuation.

Q42. **(SMP3)** Aiasha Co Ltd. produces a component, which passes through two processes. During the month of January 2011, materials for 40,000 components were put into Process I of which 30,000 were completed and transferred to Process II. Those not transferred to Process II were 100% complete as to materials cost and 50% complete as to labour and overheads cost. The Process I costs incurred were as follows:

Direct Materials	Rs.15,000
Direct Wages	Rs.18,000
Factory Overheads	Rs. 12,000

Of those transferred to Process II, 28,000 units were completed and transferred to finished goods stores. There was a normal loss with no salvage value of 200 units in Process II. There were 1,800 units, remained unfinished in the process with 100% complete as to materials and 25% complete as regard to wages and overheads.

No further process material costs occur after introduction at the first process until the end of the second process, when protective packing is applied to the completed components. The process and packing costs incurred at the end of the Process II were:

Packing Materials	Rs.4,000
Direct Wages	Rs.3, 500
Factory Overheads	Rs.4,500

Required:

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

(ii) Prepare statement of Equivalent Production, Cost per unit and Process II A/c.**[R-M-11/9]**

PROCESS I & II ACCOUNT – WAC

Q43. (PM). A Chemical Company carries on production operation in two processes. The material first pass through Process I, where Product A' is produced.

Following data are given for the month just ended:

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

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

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

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

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

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

	1,20,000 kg. of Product 'A' input (Rs.)	**1,60,000 kg. of Product 'A' input (Rs.)**
Materials Cost	1,32,000	1,76,000
Processing Costs	1,20,000	1,40,000

Required:

(i) Determine, using the weighted average cost method, the cost per kg. of Product 'A' in Process I and value of both work completed and closing work-in-progress for the month just ended.

(ii) Is it worthwhile processing 1, 20,000 kg, of Product A' further?

(iii) Calculate the minimum acceptable selling price per kg., if a potential buyer could be found for additional output of Product 'AX' that could be produced with the remaining Product 'A' quantity.

Q44. Following data are available for a product for the month of July, 2016:

Particulars	Process-I (Rs.)	Process-II (Rs.)
Opening work-in- progress	Nil	Nil
Costs incurred during the month:		
- Direct materials	6,00,000	
- Labour	1,20,000	1,60,000
- Factory overheads	2,40,000	2,00,000
Units of production:		
Received in process	40,000	36,000
Completed and transferred	36,000	32,000
Closing work-in-progress	2,000	?
Normal loss in process	2,000	1,500

Production remaining in process has to be valued as follows:

Materials 100% Labour 50% Overheads 50%

There has been no abnormal loss in Process- II.

The company follows weighted average method for valuing inventory.

Prepare Process Accounts after working out the missing figures and with detailed workings.

(R-N-16/7)

Q45. Aditya Agro Ltd. mixes powdered ingredients in two different processes to produce one product. The output of Process- I becomes the input of Process-II and the output of Process-II is transferred to the Packing department.

From the information given below, you are required to PREPARE accounts for Process- I, Process-II and Abnormal loss/gain A/c to record the transactions for the month of February 20X9.

Process-I

Input :	
Material A	6,000 kilograms at Rs. 50 per kilogram
Material B	4,000 kilograms at Rs. 100 per kilogram
Labour	430 hours at Rs. 50 per hour
Normal loss	5% of inputs. Scrap are disposed off at Rs. 16 per kilogram
Output	9,200 kilograms

There is no work-in-process at the beginning or end of the month.

Process-II

Input :	
Material C	6,600 kilograms at Rs. 125 per kilogram
Material D	4,200 kilograms at Rs. 75 per kilogram
Flavouring Essence	Rs. 3,300
Labour	370 hours at Rs. 50 per hour
Normal loss	5% of inputs with no disposal value
Output	18,000 kilograms

There is no work-in-process at the beginning of the month but 1,000 kilograms in process at the end of the month and estimated to be only 50% complete so far as labour and overhead were concerned. Overhead of Rs. 92,000 incurred to be absorbed on the basis of labour hours. **[MTP/MAR.19/2(A)]**

Q46. A product is manufactured in two sequential processes, namely Process-1 and Process-2. The following information relates to Process-1. At the beginning of June 2019, there were 1,000 WIP goods (60% completed in terms of conversion cost) in the inventory, which are valued at Rs. 2,86,020 (Material Cost : Rs. 2,55,000 and Conversion cost : Rs. 31,020). Other information relating to Process-1 for the month of June 2019 is as follows;

Particulars	Rs.
Cost of materials introduced – 40,000 units (Rs.)	96,80,000
Conversion cost added (Rs.)	18,42,000
Transferred to process-2 (Units)	35,000
Closing WIP (Units) (60% completed in terms of conversion cost)	1,500

100% of materials are introduced to Process-1 of the beginning. Normal loss is estimated at 10% of input materials (excluding opening WIP).

Required:

(i) Prepare a statement of equivalent units using the weighted average cost method and thereby calculate the following.

(ii) Calculate the value of output transferred to process-2 and closing WIP. **[R-N19/11]**

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