

Practical Problems Based on Calcutta University Syllabus

Based on the Calcutta University syllabus and the patterns found in the provided sources, there are two major types of practical problems students must master. Below are comprehensive examples with step-by-step solutions and working notes.

Problem 1: Computation of Operating Cycle Period

Question: From the following information of Nano Ltd., calculate the **Operating Cycle Period** (assume 360 days in a year).

Given Data

Items	On 01.01.2008 (₹)	On 31.12.2008 (₹)
Stock of Raw Materials	33,000	51,000
Stock of Semi-finished Goods (WIP)	35,000	43,000
Stock of Finished Goods	36,000	18,000
Sundry Debtors	50,000	40,000
Sundry Creditors	32,000	48,000

Other Information

- Sales (All Credit): ₹ 5,40,000
- Purchases of Raw Materials (All Credit): ₹ 4,50,000
- Manufacturing Expenses: ₹ 44,000
- Distribution and Other Expenses: ₹ 14,000

Solution: Statement Showing Computation of Operating Cycle

Particulars	Calculation	Days
Raw Materials Storing Period (R)	42,000 / 1,200	35
Processing Period (P)	39,000 / 1,300	30
Finished Goods Storing Period (F)	27,000 / 1,350	20
Credit Period to Debtors (D)	45,000 / 1,500	30
Gross Operating Cycle	R + P + F + D	115
Less: Credit Period by Creditors (C)	40,000 / 1,250	(32)
Net Operating Cycle	115 - 32	83

Working Notes

1. Statement of Cost of Production and Goods Sold

$$\text{Raw Materials Consumed} = 33,000 + 4,50,000 - 51,000 = 4,32,000$$

$$\text{Factory Cost} = 4,32,000 + 44,000 + 35,000 - 43,000 = 4,68,000$$

$$\text{COGS} = 4,68,000 + 36,000 - 18,000 = 4,86,000$$

2. Daily Averages (360 Days)

$$\text{Daily RM Use} = \frac{4,32,000}{360} = 1,200$$

$$\text{Daily Factory Cost} = \frac{4,68,000}{360} = 1,300$$

$$\text{Daily COGS} = \frac{4,86,000}{360} = 1,350$$

$$\text{Daily Sales} = \frac{5,40,000}{360} = 1,500$$

$$\text{Daily Purchases} = \frac{4,50,000}{360} = 1,250$$

3. Average Stocks

$$\text{Average RM} = \frac{33,000 + 51,000}{2} = 42,000$$

$$\text{Average WIP} = \frac{35,000 + 43,000}{2} = 39,000$$

$$\text{Average FG} = \frac{36,000 + 18,000}{2} = 27,000$$

$$\text{Average Debtors} = \frac{50,000 + 40,000}{2} = 45,000$$

$$\text{Average Creditors} = \frac{32,000 + 48,000}{2} = 40,000$$

Problem 2: Estimation of Working Capital Requirements

Question: Prepare a forecast of working capital requirements using the Current Assets and Current Liabilities Method for 1,30,000 units per annum.

Cost Structure

- Raw Materials: 80
- Direct Labour: 30
- Overheads: 60
- Total Cost: 170
- Profit: 30
- Selling Price: 200

Holding Periods

- Raw Materials: 4 weeks
- WIP: 2 weeks (100% RM, 50% Labour & OH)
- Finished Goods: 4 weeks
- Debtors: 8 weeks
- Creditors: 4 weeks
- Lag in Wages: 1.5 weeks

Working Capital Requirement Statement

Particulars	Calculation	Amount (₹)
A. Current Assets		
Stock of Raw Materials	$1,30,000 \times 80 \times \frac{4}{52}$	8,00,000
WIP (RM)	$1,30,000 \times 80 \times \frac{2}{52}$	4,00,000
WIP (Labour 50%)	$1,30,000 \times 30 \times 0.5 \times \frac{2}{52}$	75,000
WIP (OH 50%)	$1,30,000 \times 60 \times 0.5 \times \frac{2}{52}$	1,50,000
Finished Goods	$1,30,000 \times 170 \times \frac{4}{52}$	17,00,000
Debtors (at Cost)	$1,30,000 \times 170 \times \frac{8}{52}$	34,00,000
Total Current Assets (A)		65,25,000
B. Current Liabilities		
Creditors (RM)	$1,30,000 \times 80 \times \frac{4}{52}$	8,00,000
Outstanding Wages	$1,30,000 \times 30 \times \frac{1.5}{52}$	1,12,500
Total Current Liabilities (B)		9,12,500
Net Working Capital (A - B)		56,12,500

Operating Cycle Period

Practice Questions with Solutions

Practice Question 1: Two-Year Comparative Analysis

Question: Based on the following data for two consecutive years, calculate the **Net Operating Cycle Period** for both years. (Assume 360 days in a year).

Items	Year 1 ()	Year 2 ()
Average Stock of Raw Materials	75,000	1,05,000
Average Stock of WIP	54,000	72,000
Average Stock of Finished Goods	70,000	1,20,000
Average Trade Receivables	75,000	1,35,000
Average Trade Payables	60,000	62,500
Raw Material Consumed	4,50,000	6,75,000
Factory Cost of Production	5,40,000	7,20,000
Cost of Goods Sold	7,20,000	10,80,000
Sales (All Credit)	9,00,000	13,50,000
Purchases (All Credit)	4,80,000	7,50,000

Solution to Question 1

Components	Year 1 Calculation	Days	Year 2 Calculation	Days
(R) RM Period	$75,000 \div (4,50,000/360)$	60	$1,05,000 \div (6,75,000/360)$	56
(P) WIP Period	$54,000 \div (5,40,000/360)$	36	$72,000 \div (7,20,000/360)$	36
(F) FG Period	$70,000 \div (7,20,000/360)$	35	$1,20,000 \div (10,80,000/360)$	40
(D) Debtors Period	$75,000 \div (9,00,000/360)$	30	$1,35,000 \div (13,50,000/360)$	36
Gross Cycle	(R + P + F + D)	161	(R + P + F + D)	168
(C) Creditors Period	$60,000 \div (4,80,000/360)$	(45)	$62,500 \div (7,50,000/360)$	(30)
Net Operating Cycle	(Gross Cycle – C)	116	(Gross Cycle – C)	138

Practice Question 2: Derivation from Financial Statements

Question: From the following financial extracts of a company, compute the **Net Operating Cycle Period** (Assume 360 days):

- **Average Stocks:** Raw Materials 50,000; WIP 35,000; Finished Goods 75,000.
- **Average Trade Balances:** Receivables 90,000; Payables 54,000.
- **Annual Figures:** RM Consumed 3,60,000; Factory Cost of Production 6,30,000; COGS 6,75,000; Credit Sales 7,20,000; Credit Purchases 3,24,000.

Solution to Question 2

Particulars	Formula & Calculation	Days
RM Storage (R)	$50,000 \div (3,60,000/360)$	50
WIP Period (P)	$35,000 \div (6,30,000/360)$	20
FG Storage (F)	$75,000 \div (6,75,000/360)$	40
Debtors Period (D)	$90,000 \div (7,20,000/360)$	45
Gross Cycle	(50 + 20 + 40 + 45)	155
Creditors Period (C)	$54,000 \div (3,24,000/360)$	(60)
Net Cycle	(155 – 60)	95

Practice Question 3: Calculation in Months

Question: A manufacturing concern gives you the following time periods for its operating stages. Calculate the **Net Operating Cycle Period** in months:

- Raw Materials Storing: 1.5 months
- Work-in-Process: 2 months
- Finished Goods Storing: 2 months
- Credit allowed to Debtors: 3 months
- Credit allowed by Creditors: 2.5 months

Solution to Question 3

Particulars	Period (Months)
Raw Material Storing Period	1.5
Work-in-Process Period	2.0
Finished Goods Storing Period	2.0
Credit allowed to Debtors	3.0
Gross Operating Cycle Period	8.5
Less: Credit allowed by Creditors	(2.5)
Net Operating Cycle Period	6.0

Practice Question 4: Estimating Working Capital Requirement

Question: A firm has a **Net Operating Cycle of 6 months**. If the average estimated investment in Working Capital is **50,000 per month**, what would be the total **Estimated Working Capital Requirement**?

Solution to Question 4

Formula:

Estimated Working Capital = Net Operating Cycle Period $\times$ Average Monthly Working Capital

Calculation:

$$= 6 \text{ months} \times 50,000 = \boxed{3,00,000}$$

Practice Question 5: Finding Daily Use and Consumption

Question: Calculate the **Raw Material Storing Period (R)** and **WIP Processing Period (P)** given:

- Opening Stock: RM 33,000; WIP 35,000.
- Closing Stock: RM 51,000; WIP 43,000.
- Raw Materials Consumed: 4,32,000.
- Factory Cost of Production: 4,68,000.

(Assume 360 days in a year).

Solution to Question 5

Working 1: Average Stocks

$$\text{Average RM} = \frac{33,000 + 51,000}{2} = 42,000$$

$$\text{Average WIP} = \frac{35,000 + 43,000}{2} = 39,000$$

Working 2: Daily Cost Averages

$$\text{Daily RM Consumption} = \frac{4,32,000}{360} = 1,200$$

$$\text{Daily Factory Cost} = \frac{4,68,000}{360} = 1,300$$

Final Calculation:

Particulars	Calculation	Result
RM Storage (R)	$42,000 \div 1,200$	35 days
WIP Period (P)	$39,000 \div 1,300$	30 days

Working Capital Management

Study Notes

Overview: Working Capital Management involves managing the balance between a company's *current assets* and *current liabilities*. A key concept is the **Operating Cycle**, which represents the time duration between the purchase of raw materials and the final collection of cash from sales.

Computation of Costs

Before calculating the operating cycle, you must determine the various cost components using a cost sheet format.

Particulars	Amount (Rs.)
Opening stock of Raw materials	XXX
Add: Purchases of Raw materials	XXX
Less: Closing stock of Raw materials	(XXX)
Raw materials consumed	XXX
Add: Manufacturing expenses	XXX
Add: Opening Stock of Semi-finished goods (WIP)	XXX
Less: Closing Stock of Semi-finished goods (WIP)	(XXX)
Factory Cost of Production	XXX
Add: Office & Administration expenses	XXX
Cost of Production	XXX
Add: Opening Stock of Finished goods	XXX
Less: Closing Stock of Finished goods	(XXX)
Cost of Production of Goods Sold (COGS)	XXX

Key Formulas for Operating Cycle

To find the duration in days, we first calculate the average daily costs and then divide the average stock by that daily figure.

1. Raw Material Storage Period:

$$\frac{\text{Average Stock of Raw Materials}}{\text{Average Daily Raw Material Consumption}}$$

$$\text{where Avg. Daily Consumption} = \frac{\text{Raw Materials Consumed}}{360 \text{ days}}$$

2. Work-in-Progress (WIP) Period:

$$\frac{\text{Average Stock of Semi-finished Goods}}{\text{Average Daily Factory Cost of Production}}$$

$$\text{where Avg. Daily Factory Cost} = \frac{\text{Factory Cost of Production}}{360 \text{ days}}$$

3. Finished Goods Storage Period:

$$\frac{\text{Average Stock of Finished Goods}}{\text{Average Daily Cost of Goods Sold}}$$

$$\text{where Avg. Daily COGS} = \frac{\text{Cost of Goods Sold}}{360 \text{ days}}$$

4. Debtors Collection Period:

$$\frac{\text{Average Debtors}}{\text{Average Daily Credit Sales}}$$

$$\text{where Avg. Daily Sales} = \frac{\text{Annual Credit Sales}}{360 \text{ days}}$$

5. Creditors Payment Period:

$$\frac{\text{Average Creditors}}{\text{Average Daily Credit Purchases}}$$

$$\text{where Avg. Daily Purchases} = \frac{\text{Annual Credit Purchases}}{360 \text{ days}}$$

$$\text{Net Operating Cycle} = (1 + 2 + 3 + 4) - 5$$

Practical Example

Problem: Compute the Operating Cycle for two years and comment on the change. (Assume 360 days/year.)

Items	1st Year (Rs.)	2nd Year (Rs.)
Stock of Raw materials	75,000	1,05,000
Stock of WIP	54,000	72,000
Stock of Finished Goods	70,000	1,20,000
Debtors	75,000	1,35,000
Creditors	60,000	62,500
Raw Materials Consumed	4,50,000	6,75,000
Cost of Production	5,40,000	7,20,000
Cost of Goods Sold	7,20,000	10,80,000
Sales	9,00,000	13,50,000
Purchases	4,80,000	7,50,000

Solution with Working Calculations

Component	1st Year Calculation	Days	2nd Year Calculation	Days
(A) RM Storage	$75,000 \div \left(\frac{4,50,000}{360} \right)$	60	$1,05,000 \div \left(\frac{6,75,000}{360} \right)$	56
(B) WIP Period	$54,000 \div \left(\frac{5,40,000}{360} \right)$	36	$72,000 \div \left(\frac{7,20,000}{360} \right)$	36
(C) FG Storage	$70,000 \div \left(\frac{7,20,000}{360} \right)$	35	$1,20,000 \div \left(\frac{10,80,000}{360} \right)$	40
(D) Debtors Period	$75,000 \div \left(\frac{9,00,000}{360} \right)$	30	$1,35,000 \div \left(\frac{13,50,000}{360} \right)$	36
(E) Gross Cycle	$(A + B + C + D)$	161	$(A + B + C + D)$	168
(F) Creditors Period	$60,000 \div \left(\frac{4,80,000}{360} \right)$	45	$62,500 \div \left(\frac{7,50,000}{360} \right)$	30
Net Operating Cycle	$(E - F)$	116	$(E - F)$	138

Analysis

The Operating Cycle has **increased from 116 days to 138 days**. This indicates a **decrease in efficiency**, as money is tied up in the business for 22 additional days. To reduce this cycle, the company should focus on:

- Faster debt collection from debtors.
- Negotiating better (longer) payment terms with creditors.
- Reducing inventory holding periods for raw materials and finished goods.