

**Material Cost and Employee Cost**

Time Allowed : 70 Minutes

TEST – 2 (Solution)

Total Marks: 40 Marks

Answer to Question no.1:

**Centralized Purchasing and Decentralized Purchasing**

- 1) **CENTRALISED PURCHASING**:-Centralized purchasing is the system where one common purchasing department manages the purchasing function of all the departments of the organization. Although this system enables the organization to place the order in large quantities, it may slow down the procurement process.
- 2) **ADVATAGES OF CENTRALISED PURCHASING**:
  - a) Helps in availing quantity discount and cash discount. Hence, cost is reduced.
  - b) Prompt reporting of scrap, obsolete stock and storage losses.
- 3) **DECENTRALISED PURCHASING**:-Decentralized purchasing is a system where purchasing of material is made by various departments independently as per their own requirements. It helps to purchase the materials immediately in case of urgent needs.
- 4) **ADVATAGES OF DECENTRALISED PURCHASING**:-
  - a) Local supply sources are developed which reduces the transport cost.
  - b) Different departments are made accountable and responsible in relation to their own purchase.
- 5) **WHICH SYSTEM IS BEST?** :-It is to be decided by the organization keeping in mind the following factors:-
  - a) Nature and Quantity and quality of material to be purchased.
  - b) Location of purchase Function in business.

Answer to Question no.2:

**Essentials of Goods Wages System**

- 1) “Wage System” means the basis of giving financial remuneration to the workers on account of time and efforts being invested or employed in relation to the production work or any other work which is assigned by the employer to the employee.
- 2) Good wage system must have following two features:-
  - (a) It must increase the confidence level of the workers on account of attractive remuneration and reduced labour turnover.
  - (b) It increases the productivity level of the workers which ultimately leads to increase in profit earning capacity of the business organization.
- 3) Good wage system must also have following additional features:-
  - (a) It should be fair to both the employer as well as the employees.
  - (b) It should be easily understandable.
  - (c) It should provide more wages for efficient workers.
  - (d) It should encourage the inefficient workers for gaining the efficiency in the future.
  - (e) It should follow government rules & regulations.
- 4) Good wage system must be permanent, i.e., it must not change very often.

**Answer to Question no.3:****a) Re-order Quantity**

$$\begin{aligned} \text{Annual Usage (U)} &= 275 \text{ kgs./week} \times 52 \text{ weeks} \\ &= 14,300 \text{ kg} \end{aligned}$$

$$\text{Cost per order (P)} = ₹ 100$$

$$\text{S \& C Cost per kg. p.a.(S)} = ₹ 10 \times 20\% = ₹ 2$$

$$\begin{aligned} \text{Re-order Quantity} &= \sqrt{\frac{2UP}{S}} \\ &= \sqrt{\frac{2 \times 14,300 \times 100}{2}} = 1,196 \text{ kgs.} \end{aligned}$$

**b) Re-order Level**

$$= \text{Maximum Usage Rate} \times \text{Max. Lead Time}$$

$$= 450 \text{ kgs./week} \times 8 \text{ weeks} = 3,600 \text{ kgs}$$

**c) Maximum Stock Level**

$$\text{Re-order Level} + \text{Re-order Quantity} - (\text{Minimum Usage Rate}) (\text{Minimum Lead Time})$$

$$= 3,600 \text{ kgs.} + 1,196 \text{ kg.} - (100 \text{ kgs./week}) (4 \text{ weeks})$$

$$= 4396 \text{ kgs.}$$

**d) Minimum stock**

$$= \text{Re-order Level} - (\text{Average Usage Rate}) (\text{Average Lead Time})$$

$$= 3,600 \text{ kgs.} - (275 \text{ kgs./week}) (6 \text{ weeks})$$

$$= 3,600 \text{ kgs.} - 1,650 \text{ kgs.} = 1,950 \text{ kgs.}$$

**e) Average Stock Level**

$$= \text{Minimum Stock} + \frac{1}{2} (\text{Re-order Quantity})$$

$$= 1950 \text{ kgs.} + \frac{1}{2} (1,196 \text{ kgs.}) = 2,548 \text{ kgs.}$$

**Answer to Question no.4:****Statement Showing Labour Cost**

Worker	Time Taken	Total Wages	Efficiency wage Rate/hr.
A	15 hours	15 hrs. @ ₹ 2.5 = ₹ 37.5	₹ 2.5
B	12 hours	₹ 30 plus 10% = ₹ 33	₹ 2.75
C	10 hours	₹ 30 plus 10% = ₹ 33	₹ 3.30
D	8 hours	₹ 30 plus 10% = ₹ 33	₹ 4.125

$$\text{Straight piece-rate} = \text{Wage Cost of 12 hours}$$

$$= 12 \text{ hrs. @ ₹ 2.5} = ₹ 30$$

**Statement Showing Conversion Cost Per Piece:-**

Worker	Labour Cost Per Piece	Overheads Per Piece	Conversion Cost Per Piece
A	₹ 37.50	15 hrs. @ ₹ 5 = ₹ 75	₹ 112.50
B	₹ 33	12 hrs. ₹ 5 = ₹ 60	₹ 93
C	₹ 33	10 hrs. @ ₹ 5 = ₹ 50	₹ 83
D	₹ 33	8 hrs. @ ₹ 5 = ₹ 40	₹ 73

**Answer to Question no.5:**

**(i) (1) Inventory turnover ratio (Raw material)**

$$= \frac{\text{Raw material consumed}}{\text{Average stock of Raw material}} = \frac{\text{₹ 4,05,00,000}}{\text{₹ 22,50,000}} = 18 \text{ times}$$

$$\text{Average stock of raw material} = \frac{\text{Opening stock} + \text{closing stock}}{2} = \frac{\text{Nil} + 45,00,000}{2} = \text{₹ 22,50,000}$$

**(2) Inventory turnover ratio (Finished goods)**

$$= \frac{\text{Cost of sales}}{\text{Average stock of finished goods}} = \frac{\text{₹ 4,05,00,000}}{\text{₹ 1,08,00,000}} = 3.75 \text{ times.}$$

$$\text{Average stock of finished goods} = \frac{\text{Opening stock} + \text{closing stock}}{2} = \frac{\text{Nil} + 2,16,00,000}{2} = \text{₹ 1,08,00,000}$$

$$\text{(3) Input-Output ratio} = \frac{\text{Input consumed}}{\text{Output obtained}} \times 100 = \frac{1,80,000 \text{ units}}{1,60,000 \text{ units}} \times 100 = 112.5\%$$

$$\text{Input consumed (in quantity)} = \frac{\text{₹ 4,05,00,000}}{\text{₹ 225 p.u.}} = 1,80,000 \text{ units}$$

$$\text{(4) Stock-out ratio} = \left( \frac{\text{Orders held up due to stock shortage}}{\text{Total orders received}} \right) \times 100$$

$$= \frac{12,000 \text{ units}}{(1,00,000 + 12,000 + 8,000) \text{ units}} \times 100 = 10\%$$

**Explanation:-** During the year, the company has received order of 1,20,000 units and out of which, the order of 12,000 units could not be fulfilled due to stock shortage. Hence, the company fails to fulfill 10% of total ordered quantity.

**(ii) Comments:-**

- (1) Raw material turnover ratio (18 times) is maintained at high level which means that the consumption of raw material is at fast speed and stock of raw material is held for short period. This situation is favorable to the organization.
- (2) Finished goods turnover ratio (3.75 times) is maintained at low level which means that sale of finished goods is at slow speed and stock of finished goods is held for long period. This situation is unfavorable to the organization.
- (3) Input output ratio of 112.5% means that 12.5% of total input is wasted in manufacturing procedure.
- (4) Stock-out ratio indicates that the organization lacks internal control system in context of stock management.

**Answer to Question no.6:**

**Statement showing the Profit foregone last year due to labour turnover**

Particulars	₹	₹	₹
<b>(A) Avoidable Expenses</b>			
Settlement Cost	43,820		
Recruitment Cost	26,740		
Selection Cost	12,750		
Training Cost	30,490	1,13,800	
<b>(B) Additional Possible Profit</b>			
Additional Possible Sales	22,20,650		
(-) Variable Cost (80% of Sales)	17,76,520	4,44,130	5,57,930

**Computation of Additional Possible Sales**

Actual Sales	=	₹ 83,03,300
Total labour hours	=	4,45,000 hours
(-) Unproductive training ( $\frac{1}{2} \times 30,000$ hrs)	=	15,000 hours
Productive time	=	4,30,000 hours

As a result of labour turnover, following productive time is lost:

Unproductive training time	=	15,000 hrs.
Delayed replacement	=	1,00,000 hrs. <b>1,15,000 hrs.</b>

**Hence,** the amount of additional sales that could have been achieved had there been no labour turnover is  
 (₹ 83,03,300 × 4,30,000 hrs) ÷ 1,15,000 hrs = ₹ 22,20,650