

*** Discuss the process of selection in a bank or in a big organisation.

⇒ Methods of selection: Selection is a continuous process in an undertaking. Different methods of selection are followed in different organisation. It depends on the size & types of organisation and other factors. Usually the following methods are followed in an enterprise in Bangladesh.

1. Receiving departmental requisition: First, the personnel department is to know the number and qualifications of candidates, number of post etc. It is also to know the time and date of recruiting candidates.
2. Determination of source and serving notice: Then the source internal or external from where candidates to be recruited are determined. Advertisements are published. Different medias such as - newspapers, walls, handbills etc. are used for advertisement. The advertisement contains the terms and conditions of selection.
3. Obtaining letter or application & sorting out: The probable candidates submit applications with reference to the advertisement. The application will contain the dates, names & father's name of the candidates, his present and permanent address, name of post, his educational qualification, experience, religious status, nationality etc. After sorting the application, an interview card is issued in favour of the candidate. Applications not fulfilling the required conditions are rejected.

4. written test: whose candidates are large in number, a written test is taken. An attempt to test the knowledge of language, knowledge of Bengali, English, Mathematics or general affairs at the related subject are measured through written test.

5. Taking interview: on the basis of the result of the written test, qualifications & experiences, a brief list of candidates is prepared. The candidates of the list are called for interview. The candidates are tested face to face through interview.

6. Psychological test: those who are found eligible in the interview, are to appear at various psychological test. The tests are:

A. Aptitude test: the candidate's aptitude/tendency/willingness to a particular work is measured through aptitude test. An unwilling candidate is dropped or rejected.

B. Intelligence test: candidates depth of knowledge, adaptability to different situations or circumstances, mental capacity, present witness etc. are measured through intelligence test.

C. Proficiency test: whether the knowledge, skill & experience of the candidates are up to the mark are measured through efficiency test.

D. personality test: the candidate's likings & dislikes, habits, tastes etc. are measured by personality test. His capacity of leadership is also measured.

E. Medical test: medical or physical test is taken before final selection. The object of medical test is to be sure that the candidate is physically fit. An unfit candidate as regards physical fitness is dropped.

F. Enquiry of personal history: the candidate's personal data and data relating to family history are collected. As regards government service, verification is done.

G. Primary selection: on the basis of the above information, the candidates are given primary selection. Sometimes, this primary selection is the final. In some cases, the primary selection is sent to higher authority for approval. Some candidates are dropped from the list.

H. Issuing appointment letter: after fulfilling the required terms & conditions, decision is made to appoint candidates on temporary basis. Letter of appointment is issued in favour of the selected

~~candidate. He is asked to join in specified time and date.~~

II. Receiving joining report: One having the letter of appointment, a particular candidate then joins the work. After receiving the joining report, the selection process is ended.

Methods of training: Various methods of training of employees & executives of different levels are used in different organisation. The following methods are important:

(A) On the job training:

is an approach to training employees at through such methods as job rotation, internship, apprenticeship. It is a method where the employees got opportunity of training hand to hand remaining under the superior boss. On the job training is of following types-

1. Apprenticeship: Under this method, a man gets training as an apprenticeship employee for a fixed period of time & after a successful training, he is to serve the organisation for a fixed term. During apprenticeship training, an employee is given a small or no amount of pay.

2. Job rotation: Under this method, an employee or a recruitive is transferred from one job to another to enable him efficient in various works. Such training method is found in different banks and ministries.

3. Internship: Under this method, a trainee is given hand to hand training where the employee or executive remains under the supervision of a superior boss. The employee receives practical experience about the work. The doctors are given training through this method in our country.



2. Internship

4. Coaching: Under this method, a supervisor or manager gives training to a fixed number of trainees. The supervisor tells the trainee what is to be done & how is to be done & observes his work. Such method is found in games and sports in our country.

5. Understudy or observation method: It is almost as the apprenticeship method. But there is a small number of apprentice trainees are kept under a superior executive. Under this method, the trainee observes the work of the executive. The trainees see how the different problems are solved by the executive while performing activities.

b) off the job training: off the job training is an approach to training that takes place outside the workplace but attempts to stimulate actual working conditions. the object is to avoid on the job pressure that might interfere with the learning process. Off the job training methods are:

1. Lecture method: It is a traditional method of training for giving theoretical knowledge. Under this method, the trainees come together in a fixed place. An expert supervisor or experienced persons deliver lectures on related matters. the trainees have opportunity to acquire knowledge through asking question.

2. Discussion method: Employees can also be given training through discussion on a particular subject. During the formulation or implementation of plans & policies, the subordinates may give suggestions as to what & how

is to be done the plan. This is a sort of training.

3. Seminar: seminar consisting a number of sessions can be arranged on a particular subject. An expert presents a written article in the seminar in a particular session. Then discussion, exchange of ideas and thinking both on between the trainees and experts. This is a theoretical method of training.

4. Case method/Incidental method: It is a method through which practical knowledge of how a problem to be solved can be acquired. Under the method a particular case or incident is presented to the trainees and they are asked to write each individual decisions for solving a particular problem. Then the director's decision is described to them reasons of difference are also described.

5. Conference: A large number of trainees can participate in such a method of training. Under the method, the trainees participate in discussion on particular subject. The trainees make different questions and find out the way to solve the questions themselves. A superior executive directs the course of action on conference. The method is particularly useful to the training of supervisors & middle level manager.

6. Workshop: It is useful specially to the training of lower level executive. Under the method, the trainer represents a subject to the trainees. The trainees dividing in small groups discuss the subject and try to determine what is to be done.

~~7. sensitivity training~~; practically no trainer is here. The superior executive of different organisation participate for some long time. They are asked to present a particular problem and opinion of human behaviour. Every trainee co-operates with each other. The method removes the superiority complex of the executives.

8. Role playing method: According to this method, someone is asked to play a role in a character. He presents a managerial problem skillfully and efficiently. Others observe the role. The supervisors try to solve a problem in the light of playing role.

9. Training by post outline: the trainees can gather knowledge in colleges and universities through courses of studies. There is B.B.A. and M.B.A.

10. professional diploma course: the trainees can also increase their knowledge through getting themselves admitted into diploma courses in different technical and specialized institution

These are the off training method.

Wage system:

Definition: One of the most important requirement for a man, an adequate wage or salary, the remuneration paid to the worker engaged in production function their manual labour is called wage.

According to professor Benham —

"The remunerations which the employer pays to the workers for Labour as per agreement are wages."

Dan and Bachel defines —

"The reward which the workers receive per hour, then week or month is called wage."

Infact, wage is the reward or price paid to workers for his manual labour.

Difference between wage and salary:

~~Wage~~ and salary are both remuneration of reward for service. But there are some differences between them. The differences are:

<u>Wage</u>	<u>Salary</u>
1. <u>Definition:</u> The price of labour given to the workers directly related to production is the wage.	1. The remuneration which is given to the employees indirectly related to production is called salary.
2. <u>Basis of payment:</u> Wages are paid in hourly, daily, monthly or weekly basis.	2. Salary is paid in monthly or annual basis.
3. <u>Types:</u> Wages may be time based, production or piece-based and incentive based.	3. Salary may be a definite period based such as monthly or yearly.
4. <u>Additional price:</u> The workers get extra wages for their additional labour.	4. The salaried employees do not get extra salary for additional work.

5. Types of work: Manual workers, factory workers, machine operators get wages.

5. Administrative and clerical employees get salaries.

b. Nature of workers:

The wage receivers are generally un-educated or half-educated.

6. The salary earners are generally educated and trained.

Method of wage payment:

There are two basic systems or methods of payments of wages to workers. They are:

1. Time rate wage system.
2. Piece rate wage system.

Other systems are revised methods of this two basic systems. There are also some incentive methods of wage payment. The different systems are described below:

1. Time rate system:

Time rate wages are calculated by reference to the number of hours worked. Time is the basis of wage determination. The rate of

wages may be per hour, per day, per week or month. For example, a worker is paid in an hourly rate of taka 5 or 6 or 10 for 8 hours a day. The factory workers get a fixed weekly rate of wages for 44 hours worked in a week.

Suitability or Application of time-rate system:

- 1.
2. When skill rather than speed is main consideration, time rates are applicable.
- 3.
4. When an individual has little or no control over output, a time-rate is applicable.
5. When the production or output is determined by the speed of machine, time-rate system is applicable.
6. When a worker can not be guaranteed, a steady flow of work then he can not be really expected to be paid on the basis of work done

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7. When the work requires very effective supervision, time rate is applicable.
 8. When the work must be temporarily stopped for unavoidable reason, a time rate is applicable.

Advantage of time rate system of wages:

1. Time rate is a very easy and simple method.
2. The workers feel secured and remove mental anxiety.
3. It improves quantity of product.
4. The earnings of a worker, whose efficiency reduced are not decreased.
5. It does not create differences among workers.
6. There is a guarantee of wages at a definite period of time.
7. Calculation of wages is easy.
8. Trade union thinks it a better method of payment.

Disadvantages:

1. Efficient and inefficient workers get equal rate of payment so, efficient workers are discouraged.
2. Quality of output is reduced.
3. Supervision cost increases.
4. Speed of work reduces As a result cost of production increases.
5. Efficient workers can not produce

Application of piece rate system:

The piece rate system of payment of wages is suitable:

1. Where the standard of work is easy to determine.
2. Where the unit of production can easily be measured.
3. Where the quantity rather than quality is important.

4. Where the relation of work and quantity is direct and clear.
5. Where the supervisors can not give sufficient attention on the performance of work.
6. Where the work runs approximately at the same speed.
7. Where the fixed costs are more in an industry
8. Where the production process is divided into various stages.

Advantages:

1. It is a simple system to understand and operate.
2. Workers get fair or wages.
3. Efficient workers get more wages, so they are more induced to work more.
4. Workers devote their full effort to get more wages.
5. As production increases, cost of production decreases.
6. This is a fair wage system.
7. Cost of supervision reduces.

Disadvantages:

1. Under piece rate system, the wastage of raw materials and misuses of machines increase.
2. Workers give importance to quantity rather than quality of products.
3. There is no guarantee of wages, wages may be higher or lower.
4. The workers work hard to earn more and more. As a result, their health deteriorates.
5. Labour dispute may arise if production is hampered due to technical disturbance or any other reason.
6. There is a chance of labour retrenchment.
7. Due to the differences in the earnings of workers, jealousy among the workers may arise and unity may be spoilt.

Task Wages System:

Task wages system has been introduced to remove the defects of time rate and piece rate system of wages. It is a combination of the two systems. Under the system, a determined task is to be performed in the determined time. The workers can know how much work to be done within a specified time. But he does not get extra wages for performing extra work. One of the advantages of the system is that owner or worker can know how much wages are to be paid or received for a specified task.

Incentive Wages plan:

The wages plan which gives the workers incentive to work more is called incentive wages plan. It induces the workers to have the highest productive capability. The incentive wages plans are mainly of two types:

1. Halsey premium plan.
2. Rowan premium plan.

Halsey premium plan:

According to the plan, a standard time is fixed for doing a particular work. If a worker can perform the task before the standard time, he is paid wages for the time taken for the task at the predetermined time rate. Besides, he is entitled a bonus share for the time saved in the standard time. Usually, the worker is paid 50% bonus on the time saved.

Example:

Standard time for job = 3 hrs

Time rate per hour = Tk. 10/-

Actual time taken = 6 hrs.

Time saved $(3 - 6)$ hrs = 2 hrs

The worker will get wages Tk. 60/-

He will get a bonus of $(2 \times \frac{50}{100}) = 1$ hr.

He will get a total wages of $(6+1) = 7$ hrs.

Hence, the workers will get totally $= 7 \times 10 = 70$ Tk.

Therefore, in Halsey premium plan the employer and workers are benefitted 50 : 50.

Advantages:

1. Halsey method reverses efficiency. The workers are induced to increase their efficiency.
2. Both skilled and unskilled workers are satisfied.
3. profit increases as the cost of production per unit decreases.
4. The method emphasizes the saving of time.

Disadvantages:

1. The workers may be deprived if the standard time, standard production and wages are not fair.
2. Calculation of wages is complex to some extent.
3. The rate of bonus decreases as the efficiency of workers increases.
4. So, the workers are not encouraged to work.
5. The method regards the worker as needy animal, their social and mental needs are overlooked.

~~Rowan Premium Plan~~, James Rowan, the famous producer of Great Britain is the inventor of Rowan premium plan. Under Rowan premium plan, the amount of wages increases according to the ratio of the standard time and the time saved. A standard time is fixed to perform a task. The worker gets a time rate wage though he can not complete the task within the standard time. He will get a premium (bonus) plus the time rate wage on the basis of the ratio of the standard time and the time saved.

Example:

$$\text{Premium or Bonus} = \frac{\text{Time saved}}{\text{Standard time}} \times \text{Actual time} \times \text{Hourly rate of wage}$$

where, Standard time = 8 hrs

Hourly rate of wages = Tk. 10/-

Actual time = 6 hrs.

Time saved = (8 - 6) = 2 hrs.

$$\text{Percentage of standard time and time saved} = \frac{2}{8} = \frac{1}{4} \\ = 25\%$$

$$\text{Therefore, wages} = 6 \text{ hrs} \times 10/- \\ = \text{Tk. } 60/-$$

$$\text{Premium or Bonus} = 25\% \text{ of } 60/- = 15/-$$

$$\therefore \text{Total wages} = 60/- + 15/- = 75/-$$

Therefore, the worker can earn more by working just 6 hours.

Difference between Halsey and Rowan plan:

Under Halsey premium plan, the bonus is determined on the basis of the agreement between the worker and the owner. But under Rowan premium plan, the bonus is determined by the ratio of standard time and the time saved.

Advantages:

1. The plan helps to increase the efficiency of workers.
2. The efficient or skilled workers have opportunity to earn more.
3. Direct labour cost decreases.
4. Indirect cost per unit decreases.

Disadvantages:

1. It is a complex system. The calculation of wages requires a lot of time.
2. The rate of bonus reduces, as the efficiency of workers increases.
3. Due to the differences in labour cost, the amount of the cost of wages is difficult to determine.

~~4. As a result, of working fast to save time, the quality of product deteriorates, & there is wastage of raw materials and machineries.~~

Economic Order Quantity:

What is EOQ:

- EOQ is an ancient or old technique of inventory control. F.W. Harris invented first the EOQ model in 1915. Since then, it has been largely used. EOQ is the quantity of goods which incurs minimum inventory cost.

According to H.N. Purnam -

"The order size associated with such minimized cost is called an economic order quantity."

A.C. Louffer said -

"The economic lot size is that quantity of an item which can be ordered to replenish the inventory at the minimum total cost."

EOQ is used in procuring goods. It determines the order quantity of goods which incurs minimum cost.

Determination of EOQ mathematically: We can determine EOQ mathematically in the following way.

$$EOQ \text{ or } Q = \sqrt{\frac{2 \times A_0}{I_c}}$$

where, A_0 = Annual demand

O = Ordering or procurement cost

I_c = Inventory carrying or holding cost

Example - 1:

The annual demand for an item is 40000 units. Ordering cost is Tk. 125/- and holding cost is Tk. 0.50/- per unit. What is the EOQ?

Ans: Here,

$$A_0 = 40000 \text{ units}$$

$$O = 125 \text{ t.}$$

$$I_c = 0.50 \text{ t.}$$

$$EOQ = \sqrt{\frac{2 \times A_0}{I_c}}$$

$$= \sqrt{\frac{2 \times 40000 \times 125}{0.50}}$$

$$\therefore EOQ = 4472 \text{ units}$$

Example - 2:

If the requirement for a particular inventory item is 10000 units per year, ordering cost Tk. 4/- and carrying cost Tk. 2/-.

a) What is the EOQ?

b) Find out the optimum number of order per year.

c) What is the total inventory cost for the year?

Ans: a) $EOQ = \sqrt{\frac{2 \times A_0}{I_C}} = \sqrt{\frac{2 \times 10000 \times 4}{2}}$

$$= 200 \text{ units}$$

b) Optimum number of order per year,

$$\begin{aligned} &= \frac{A}{Q} \\ &= \frac{10000}{200} \\ &= 50 \end{aligned}$$

Therefore the enterprise should place order 50 times per year.

c) Total inventory cost (T_C)

$$\begin{aligned} &= \frac{A}{Q} (O) + \frac{Q}{2} (I_C) \\ &= \frac{10000}{200} \times 4f + \frac{200}{2} \times 2f \\ &= 200f + 200f \\ &= 400f \end{aligned}$$

Ans:-

a) EOQ : 200 units.

b) Annual optimum number of order: 50.

c) Total inventory cost : TK. 400f.

Reorder point on maximum-minimum system:

A farm determines reorder quantity and minimum inventory after analyzing the relevant matters. For example, a farm desires to maintain always 200 units of inventory i.e., the minimum inventory is 200 units and re-order quantity is 300 units. But at what point the farm will re-order for 300 units of goods? It requires some information, such as - procurement time and rate of use of the inventory.

Let us suppose that, procurement of 300 units of goods will require one month time.

And the rate of use of inventory for a month is 300 units.

Now, we can determine the re-order point.

$$\therefore \text{Re-order point} = \text{Minimum inventory} + (\text{procurement time} \times \text{rate of use})$$

$$= 200 \text{ units} + (1 \times 300 \text{ units})$$

$$= 200 + 300$$

$$= 500 \text{ units.}$$

equence
mz.

~~✓ Production control:~~

Meaning and definition:

When the product is being manufactured, the production must be controlled to ensure that, the programmed output is constantly maintained. This function is known as production control.

According to H.N. Broom,

"production control is concerned with planning and time scheduling production and with efficient co-ordinating of manufacturing activities, so the products flows through the plant on schedule."

R.R. Major defines,

"Production control involves the development and implementation of a plan which is capable of yielding the required results."

In any production organisation, production control involves the process of seeing that production goes in the right quantity, in the right quality and at the right time.

Functions or steps of production control:

1. production planning:

The first function of production control is production planning. The term planning is used to indicate all the issues concerned with deciding how the production should be carried out. Sometimes it is referred to as 'programming', acknowledging the fact that detailed schedules and programmes have to be prepared. In fact, production planning is deciding in advance what should be produced and how is to be produced, when a product is to be manufactured. The production must be carefully planned in order that the manufacturing departments are loaded efficiently and within their capacities. This function is known as production planning.

2. Routing:

Routing determines what processes are to be done and where and how the processes are to be done to produce a particular product. Routing describes the sequence of operations and processes to be done.

According to Alfred and Betty -

"The specification of the flow or sequence of operation and processes to be followed in-

~~producing a particular manufacturing lot."~~

~~The main objective of routing is to maintain the continuity and economy of functions.~~

3. Scheduling:

~~It is another important function or step of production control. Scheduling is the next step after routing. Scheduling determines when to start and finish a work.~~

According to Carson and others -

~~"Scheduling is defined most simply as the portion of the production control function that determines when each operation to start and finish."~~

The scheduling process covers all aspects of the time tabling of production precisely, when each operation in process has to be carried out is determined.

4. Dispatching:

After routing and scheduling, the step is dispatching. Dispatching deals with all aspects of giving the necessary authority to start the work and to obtain tools, materials and other materials requirements.

According to Alfred and Betty,

"The routing of setting productive activities in motion through the release of orders and instructions in accordance with previously planned times and sequences embodied in route sheets and schedule charts."

In fact, dispatching is giving the workmen the orders of to start their work according to the routine.

5. Follow-up:

It is the last step or function of production control. It sees the progress of raw materials and semifinished products processing. Follow up is that function of production control which sees that production work is done according to the plan. It ensures that the work is carried out as planned, the time table prepared by the scheduling section has to be compiled with i.e., the planned dates have to be met. If there is any deviation, corrective measure is taken.

✓ plant layout:

meaning and definition:

plant layout is the effective arrangement of machines and services for production services. It is concerned with the physical placement of departments and arrangement of the equipment within them in a plant and service facility.

According to F.S. Baffa,

"plant layout is the integrating phase of the designing of a production system."

Kannanatty and Mallick defines plant layout as -

- a) placing the right equipment
- b) Coupled with the right equipment.
- c) In the right place.
- d) To permit the processing of a product unit in the most effective manner.
- e) Through the shortest possible distance.
- and, f) In the shortest possible time."

Lead time:

The ~~interim~~ ^{start} period of making the order for goods and receiving order, thereof is called lead time. Procurement of goods always takes some time after making order of the same. This procurement is the lead time.

For example, an order is placed for some goods on first march and it is received on 15th March. The procurement time is 15 days. This 15 days is the lead time. Lead time must be considered in determining reorder point.

EOQ versus ELS:

There is no difference in the ideas of EOQ and ELS.

There is difference only in the use of the two formulas.

EOQ or Economic order quantity is used in procuring goods i.e., EOQ determines quantity of order which is economical.

On the otherhand, ELS or Economic lot size is applied to determine the quantity or size of production in a lot. That is, ELS determines what quantity of production is economical in a lot.

~~Example-6~~ Annual demand = 20000 units, price per unit = Tk. 5t, Annual inventory cost = 10% of price per unit, order cost = Tk. 25t

- Determine.
- Economic order quantity
 - Optimum number of orders
 - Total inventory cost

Soln: As per information,

$A = 20000$	units
$F = Tk. 5t$	
$IC = 10\% \text{ of } P$	
$= \frac{5 \times 10}{100} = 0.50t$	
$O = Tk. 25t$	

$$\text{a) } EOQ = \sqrt{\frac{2AO}{IC}} = \sqrt{\frac{2 \times 20000 \times 25}{0.50}} = \sqrt{2000000} \\ = 1414.2 \text{ units} \\ = 1414 \text{ units.}$$

$$\text{b) Optimum number of orders per year} = \frac{A}{Q} \\ = \frac{20000}{1414} \\ = 14.14 \text{ orders}$$

$$\text{c) Total inventory cost, } TIC = \frac{A}{Q}(O) + \frac{Q}{2}(IC) \\ = \frac{20000}{14.14}(25) + \frac{14.14}{2}(0.50)$$

$$\therefore TIC = 353 + 353 = 706 \text{ Tk.}$$

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