

## **Class12 Political Science (Class: Wednesday-20/5/20)**

### **Chapter: Fundamental Rights**

Article 23 & 24 of the Indian Constitution provide the right against human exploitation where trafficking in human beings & forced labour is prohibited. Moreover employment of kids below the age of 14 years is also considered illegal. Our country doesn't have any state religion & secularism is considered ideal. The people have the right to practice & manage any religion. The Indian Constitution also guarantees Cultural & Educational rights of the people. The rights are made to ensure a healthy environment for the people to develop. It provides protection to minorities too. Fundamental Duties are also incorporated in the Constitution.

#### **Question(Long):**

Elaborately discuss Article 24 to 30 of the Indian Constitution.

## **Class12 (Psychology) Class Wednesday (20/5/20)**

### **1st Chapter: Cattell's Fluid & Crystallized intelligence:**

Fluid intelligence means inherited abilities to think & reason & it is utilised for learning & problem solving. It is dependent on neurological development & is not affected by education & culture. Crystallized intelligence is accumulated knowledge & based on information. It includes intellectual competence & is reflected in a person's vocabulary & general knowledge. So the capacity of analysing an interrelationship between things is fluid intelligence whereas stock & usage of one's words is crystallized intelligence. Fluid intelligence reduces but crystallized intelligence increases with time. Wechsler adult intelligence scale measures both but this theory emphasises more on general ability of human beings, it doesn't throw light on the specific factor which determines the uniqueness of intelligence level.

#### **Question (long):**

State explicitly the differences between fluid & crystallized intelligence.

## **Commerce**

### **Class 12**

#### **Ch-1 and 2 Revision**

Q1: What is swot analysis?

Q2: Explain the factors effecting swot analysis.

Q3: Explain the advantages of swot analysis?

Q4: What are the factors that effect the capital structure?

Q5: What are the major sources of long term finance?

**Economics**

**Class 12**

**Ch-4 and 5**

Q1: What is elasticity of demand?

Q2: What is price elasticity of demand?

Q3: What is perfectly demand?

Q4: Explain the law of supply.

Q5: What is market supply?

## **Business Studies**

### **Ch -5 and 6 revision**

Q1: What is staff training?

Q2: What is the importance of training?

Q3: Why is training needed in an organization?

Q4: What are the benefits of training?

Q5: What are the ways through which employees moral can be boosted?

Q6: What are the disadvantages of low moral?

GEOGRAPHY  
CLASS XII  
CHAPTER 9 (part 2)

**Demographic Attributes**

**Age Composition:** - the Census of India classified population in three broad age groups. These groups are 1. Young (upto 15 years) 2. Adult (15 to 59 years) and 3. Old (60 years and above). The adults group is called 'the working age group'. The table shows that over 30% of our population belongs to young age group of 0 to 14 years. More than 60% of the total population is in the working age group of 15 to 60 years. About 8.6% are old people.

**TABLE 9.5. Population under different age groups (2011)**

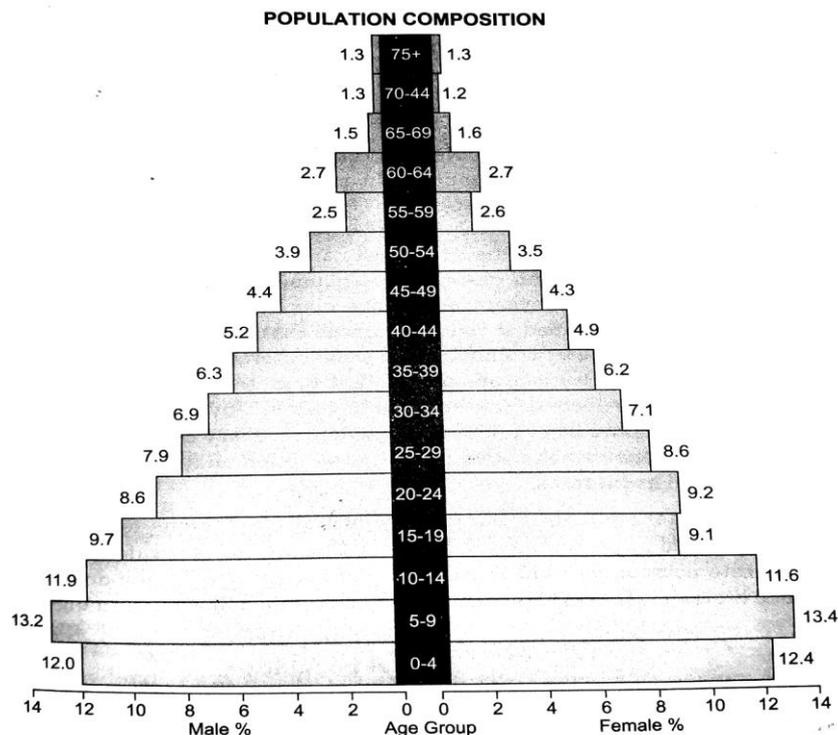
Age group (years)	Population	Percentage of total population
0-14	372444116	30.76
15-34	421959587	34.85
35-59	308112432	25.45
60 and above	103849040	8.58
Age not stated	4489802	0.36

**Source :** Data computed from Economic Survey 2017-18, p. A159.

The percentage of population is very high in India. In most developed countries, it does not exceed 25% while in India it is as high as 30.76%. Portion of young population is due to high birth rate and declining infant and child mortality. Since the group is

economically unproductive, it forms part of dependent population. Old people also do not participate in economically productive activities and forms part of dependent population. On the contrary, the adult age group is biologically most productive, economically most active and spatially most mobile. It supports the population in the other two groups.

The 86 pyramid of Indian population



**FIG. 9.3. India : Age and sex structure.**

present a very broad base tapering off towards the top. The biggest percentage of population both of males and females, is in the age group of 5 to 9 years. This shows that the birth and infant mortality rates are still very high in India. The percentage of population decreases with age indicates less number of people in the higher age groups.

Composition of population of India is undergoing a gradual change with the declining birth and death rates. The proportion of young population decline from 42.0 percent of the total population in 1971 to 30.76% in 2011. Contrary to it, proportion of the adults increased from 30.7% to 60.3 percent and the old from 6.3% to 8.6 % during 1971 to 2011. The promotion of the young and the old is comparatively higher in rural areas than in urban places. This results in higher dependency ratio in rural areas as compared to the urban areas. Following three factors are responsible for such a situation:

- i) what we are higher in rural areas as compared to those in urban areas.
- ii) large number of adults migrate from rural areas to urban areas in search of job and better facilities of life
- iii) adults who migrate to urban areas in search of job come back to their rural homes in old age.

### Literacy:-

**Literacy rate:-** literacy rate is the number of illiterate persons for each hundred people and is expressed in percentages. 1981 census literacy rate was calculated by dividing literate persons by total population and multiplied by 100. This was known as tooth literacy rate and was calculated by using the following formula:

$$\text{Crude Literacy Rate} = \frac{\text{Literate population}}{\text{Total population}} \times 100$$

It was decided in 1991 to use the term literacy rate for the population relating to 7 years and above. The same concept has been continued in 2011. This is a better measure of literacy and is calculated by the following formula:

$$\text{Literacy Rate} = \frac{\text{Literate population}}{\text{Population in the age group of seven years and above}} \times 100$$

As the Population of India increase with the passage of time, the number of literate

TABLE 9.7. Literacy Rate in India : 1951-2011

Census Year	Persons	Males	Females	Male-Female gap in literacy
1951	18.33	27.16	8.86	18.30
1961	28.30	40.40	15.35	25.05
1971	34.45	45.96	21.97	23.98
1981	43.57	56.38	29.76	26.62
1991	52.21	64.13	39.29	24.84
2001	64.83	75.26	53.67	21.59
2011	74.04	82.14	65.46	16.68

Source : Census of India 2011, Paper 1, p. 102.

and illiterate also increased. But a significant milestone reached in the Census of India 2001, when the total number of illiterates came down from 32.82 crores in 1991 to

26.62 crores in 2001. For the first time since Independence there is a decline in the absolute number of illiterates during a decade.

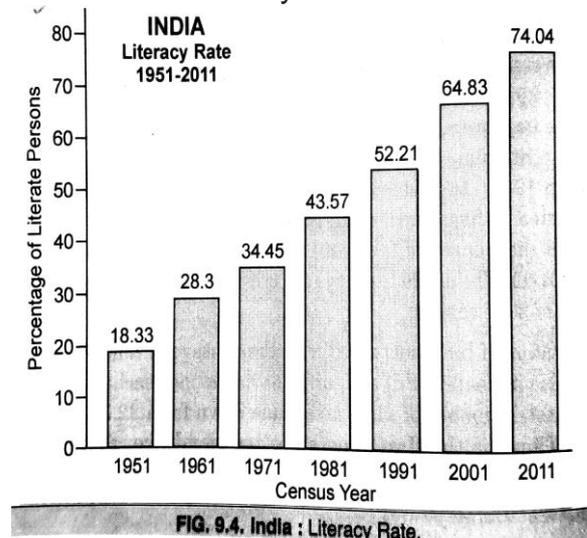
Therefore, the decade 1991 to 2001 has been termed as the 'literacy decade'. The literacy rate for the country as a whole in 2011, 74.0

4% from the population each 7 and above. The corresponding figures for males and females are 82.14 and 56.46% respectively. Thus, over four-fifths male and nearly two-thirds of female population is 7 years and above illiterate in the country at present. Male-female gap in literacy rate is an important indicator of literacy. It increased from 18.30 percent in 1951 to 26.60 in 1981 but declined thereafter. It decreased to 21.59 percent in 2001 and 16.68% in 2011.

**Regional pattern of literacy:-** states and union territories of India have been arranged in descending order with respect to literacy rate in the following table:

It shows the regional patterns of literacy in India. Kerala excels among all the states and union territories of India. Tamil Nadu and female literacy rates in this state are 96.02 and 91.89% respectively. Closely followed by Mizoram whose literacy rate is 91.59%.

Among the union territories Lakshadweep has recorded the highest literacy rate of 92.28%. Bihar has the lowest literacy rate of 63.82 percent in the whole of India. Male and female literacy rates are also the lowest in Bihar. Only 53.3% of the females are literate in Bihar. The other states whose low literacy rate of Jharkhand, Jammu and Kashmir, Arunachal Pradesh, Uttar Pradesh etc. In all, as many as 11 states and union territories have literacy rate below the national average of 64.84%.



### **Working population: -**

**Participation rate:** - position of workers in the total population is expressed by a rate called participation rate. It shows proportion workers in the total population in percentage.

**Main workers:-** the census of India, 1981 recognised an individual as a main worker if he was engaged in any canonically gainful work for a period of 183 days in a year. In 2001 census, workers are defined as those workers who had worked for the major part of the reference period that is 6 months or more.

**Marginal Workers:-** those workers who put in a lesser number of days in the year were classified as marginal workers. In 2001 census the marginal workers are defined as those workers who had not worked for the major part of the reference period that is less than 6 months.

The working population comprises persons in the age group of 15 to 59 years., according to the definition of a worker, the average participation rate for India is 39.8 percent in 2011. Thus nearly two-thirds of Indian people are non-working and depend upon workers. The male participation rate of 50.17% indicates predominance of male within work force. The corresponding participation rate for females is only 25.60%.

There are significant differences between the rural and urban components of population in terms of participation rates. Thus, 52.1 percent of male population and 13.97 percent of female are workers in rural areas, proportion of workers decline sharply in the urban components among both males and female segment.

A little over one-half of the rural working force consists of cultivators. 30 percent are agricultural labour. Thus agriculture offers employment to some 81% of the rural working force. About 3% of the workforce is engaged in handicraft industries type of

work include trade, transportation and service engage 16% of the workforce. Large regional variation in the participation rate. Level position is that the male participation rates are very high in the predominantly tribal state of the northeast., the participation rate of the male population is as high as 53.7 6% in Arunachal Pradesh, 6.55% in Sikkim. Punjab and Haryana, The two agriculturally developed States have the lowest female participation rate - 4.4% ants 10.764 percent respectively. On the other hand, the position of women is most disturbing in the state uttar Pradesh, west Bengal, Rajasthan and Odisha where from 5 to 10% of the total female population is returned as workers.

**Occupation:** - the occupation of an individual refers to his trade, profession and type of work. The 1981 Indian census adopted the following individual classification of occupation: -

Cultivators

Agricultural labourers

Household industrial workers

other workers.

The classification of workers at update in 1981 has again been accepted in 2001 and 2011 census years. The percentage of workers in 2001 has declared as compared to 1981 and the percentage of agricultural labourers has remained almost the same, however a considerable increase in household industry workers is noticed. This Trend indicates that the farmers are slowly shifting to house all industries.

Implication of demographic attributes for development: -

1. Demographic attributes a population of a country is the primary indicators of economic progress and social well-being of its people. The composition of the urban population the percentage of population engaged in which type of occupation and on the basis of that the Government of a country can take the the economic development plans.

**2. Sex composition:-** Sex composition is a very important demographic attributes of population separate data for males and females are important for various type of planning and for other demographic characteristics such as mortality, migration, marital status, economic characteristics etc. The balance between two successive affect the social and economic relationship with the community.

**3. Age structure:** - structure is an important demographic attribute which deserves considerable attention and in-depth study. Many types of planning, particularly planning of community Institutions and services, man power supply etc are guided by the age structure of population. It is also an important variable in the studies party to mortality fertility and other demographic characteristics such as dependency ratio etc.

**4. Literacy:** - literacy and education are very important indicators of human development. These two components provide solid waste for development of different aspects of the present day Civilization such as modernization, industrialisation and urbanisation, trade, transport, communication etc.

**5. Working population:** - it is always the working population rather than the total population which participate in economic activities, has a very high influence on that economic development. Higher participation rate is the key to economic growth and social welfare. So we can say that it is also very important to get a proper economic development plan of a particular country.

Home assignment 9(part 2):

1. Write down the implication of demographic attributes for the development of a country.
2. The dependency ratio is higher in rural areas than in urban areas. Give two reasons of it.
3. Define Literacy Rate.

Sayanti Chatterjee

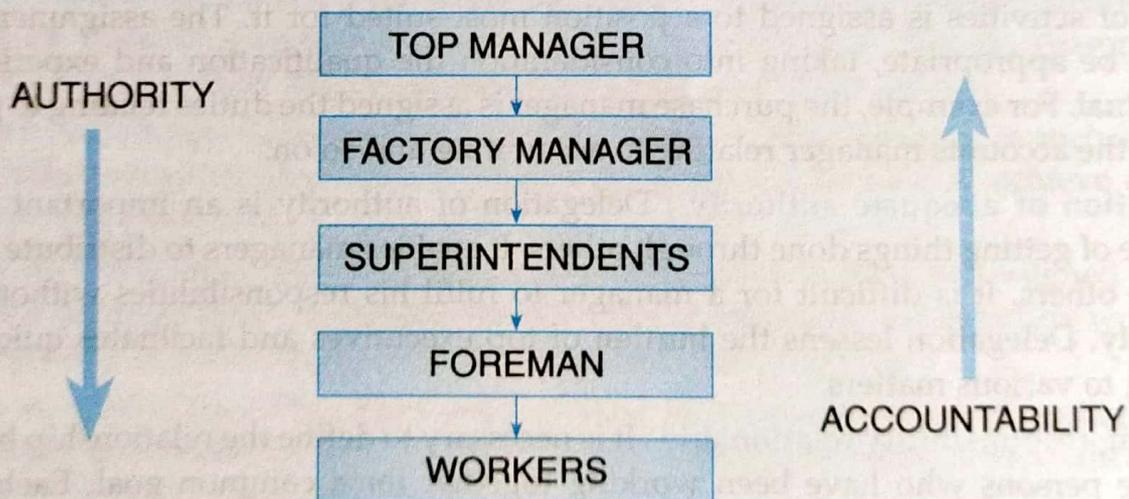
# Commerce Class XII

## Chapter : Management (Part -10)



### 3.43. Line (or scalar, or vertical, or military) organisation

This refers to an organisational structure in which only one form of authority (i.e. line authority) exists. Line authority refers to the direct authority of a manager over his subordinates. It represents a direct vertical relationship, through which activity flows. The line of authority flows from top to bottom throughout the organisation. The quantum of authority is highest at the top and reduces at each successive level down the organisational scale. The line of authority also provides the formal channel of communication and accountability in the organisation. This type of organisation resembles a military administration.



#### 3.43.1. Scope (or suitability) of line organisation

The line organisation can be successfully followed where :

- (i) The size of operation is limited (i.e. small scale business with a limited number of subordinates) ;
- (ii) The work is simple and of a routine nature (i.e. there is no need for specialisation) ;
- (iii) The nature of business or process of manufacture is of a continuous type (like industries engaged in textiles, paper, sugar, oil refinery, etc.) ;
- (iv) The plant and machinery are automatic and modern ;
- (v) The labour-management relationship is simple and problems can be easily resolved ;
- (vi) The workers are disciplined and try to obey the instructions of their superiors.

CamScanner



### 3.43.2. Features of line organisation

The main features of a line organisation are as follows :

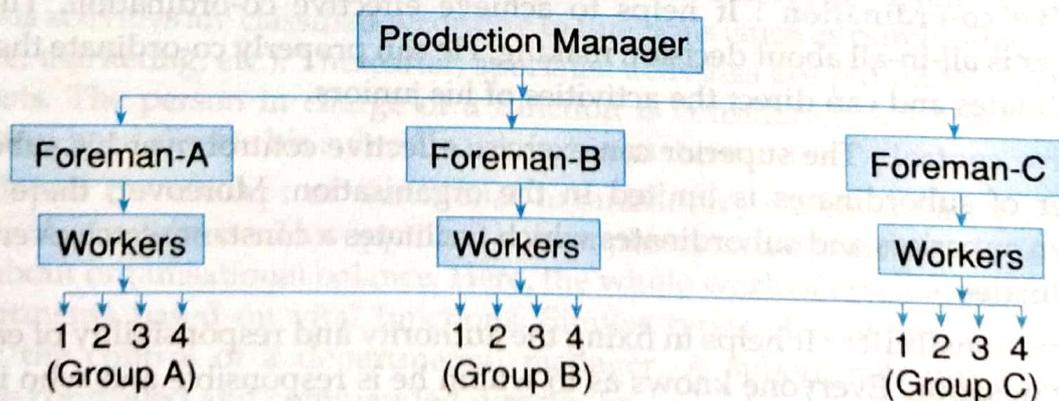
- (i) **Simplicity** : It is the simplest form of organisation. It is easy to operate and control.
- (ii) **Form of authority** : Only one form of authority (i.e. line authority) exists in a line organisation. Line authority refers to the direct authority of a manager over his subordinates.
- (iii) **Flow of instructions** : All orders and instructions flow from the top and reduce gradually in the hierarchy.
- (iv) **Flow of suggestions** : All requests, suggestions, problems, grievances, reports, etc., flow from bottom to top. In other words, accountability flows in an upward direction. All employees are responsible to their immediate superiors.
- (v) **Unity of command** : The principle of unity of command is observed to a great extent. Here, every individual is under the command of one superior only.
- (vi) **Creation of departments** : In a line organisation, departments are created only for basic activities (like purchasing, manufacturing, financing, marketing, etc.). All departments co-ordinate with each other for achieving a common goal.
- (vii) **Span of control** : The number of employees working under a superior is limited. In other words, a limited number of subordinates are placed under the control of an executive.
- (viii) **Work load of a manager** : The work load of a manager is higher because each line manager has to handle both basic activities and specialised activities.



### 3.43.3. Types of line organisation

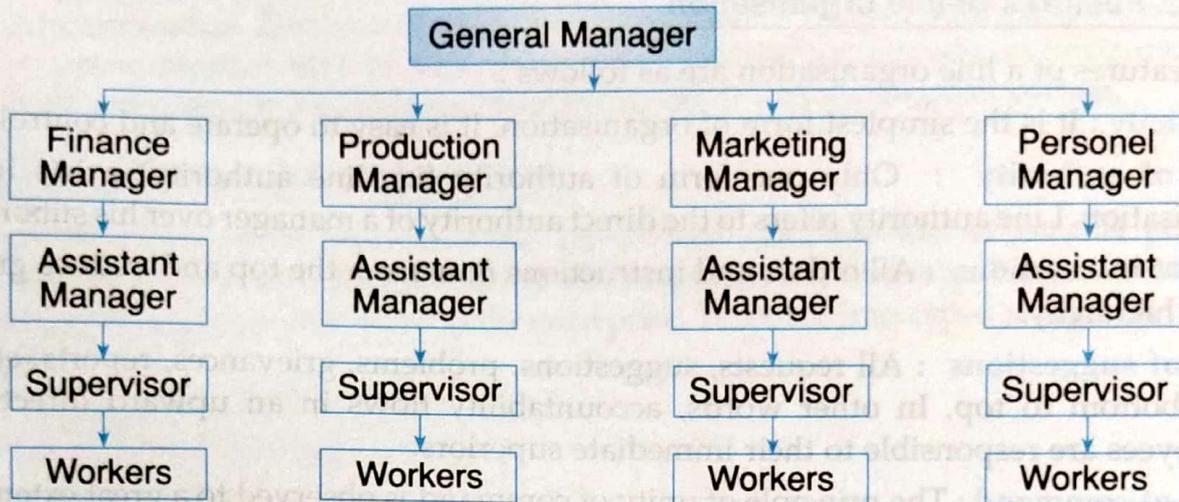
Line organisation is of two types, namely, pure line organisation and departmental line organisation.

- (1) **Pure line organisation** : Here, the activities at each level is the same and everyone performs the same type of work. The divisions (or groupings) primarily exist for the purpose of control and direction. The following chart shows the idea of pure line organisation.



- (2) **Departmental line organisation** : Here, the activities are divided into certain departments, which are put under the charge of departmental heads. A departmental head receives orders from the general manager and passes them on to his immediate subordinates. The various departmental heads enjoy equal status and perform their work independently. There is an unity of control and the line of authority flows from top to bottom.

The following chart shows the idea of departmental line organisation :



#### 3.43.4. Advantages (or merits) of line organisation

Line organisation offers the following unique advantages :

- (i) **Easy to establish** : It is simple to establish and can be easily understood by the employees. Every employee in the organisation knows his assigned tasks and to whom he is accountable.
- (ii) **Unity of command** : Every employee is accountable to one boss (superior) in the department. It facilitates unity of control, which is possible because of unified control. It is in accordance with the principle of scalar chain.
- (iii) **Quick decisions** : The unification of authority and responsibility ensures prompt decision taking. Here, a departmental head takes various decisions by himself without wasting time in deciding and referring things.
- (iv) **Direct communication** : There is a direct link between the superior and his subordinates. As a result, the grievances, suggestions, etc., of subordinates reach the top management in a short span of time.
- (v) **Effective co-ordination** : It helps to achieve effective co-ordination. The departmental manager is all-in-all about decision making. He can properly co-ordinate the activities of his subordinates and can direct the activities of his juniors.
- (vi) **Effective control** : The superior can exercise effective control over his subordinates as the number of subordinates is limited in the organisation. Moreover, there is a direct link between superiors and subordinates which facilitates a constant watch over the activities of subordinates.
- (vii) **Fixed responsibility** : It helps in fixing the authority and responsibility of each employee in the organisation. Everyone knows as to whom he is responsible and who is responsible to him. As a result, nobody can avoid responsibility.
- (viii) **High adaptability** : Adjustments and changes can be easily made in this type of organisation. It can easily adjust itself to suit changing conditions. The departmental manager can make changes if a new situation warrants, without wasting time.



### 3.43.5. Disadvantages (or demerits) of line organisation

Line organisation suffers from the following limitations :

- (i) **Lack of specialisation** : The departmental managers cannot be experts in every line of business. The quality of decisions may suffer when departmental managers take decisions with regard to every aspect of the department.
- (ii) **Overloading of work** : The departmental managers are too overloaded with their work. As a result, they may not be able to direct the efforts of their subordinates properly. The manager may not be able to perform his assigned task as he is overloaded with responsibilities.
- (iii) **Lack of initiative** : Here, the final decision is taken by the top management. Departmental managers have little power as the ultimate authority lies in the hands of the the top management. This adversely affects their initiative to motivate their subordinates.
- (iv) **Scope for favouritism** : There is great scope for nepotism and favouritism in this type of organisation. Departmental managers judge the performance of subordinates according to their own norms and yardsticks. As a result, an inefficient employee (or yesman) may get a higher and better post.
- (v) **Poor attention to subordinates** : Subordinates put forward their grievances and suggestions to their superiors. The superior pays less attention to the suggestions sent by the lower ranks. As a result, subordinates start keeping a distance from their superiors.
- (vi) **Lack of operational uniformity** : All departmental heads try to run their departments in their own way and according to their suitability. As a result, there may be a lack of operational uniformity among various departments.
- (vii) **High concentration of authority** : Here, all decision-making of a department is entrusted to a single person (i.e. departmental manager). The success of the department depends upon the ability of the departmental manager. An error of judgement on his part may be fatal to the department.



### 3.44. Functional (or staff) organisation

Functional organisation is based on various functions of an enterprise. Under a functional organisation, various activities are classified according to functions (such as purchasing, personnel, production, finance, marketing, etc.). Thereafter, specialist activities are put under the charge of functional specialists. The person in charge of a function is considered as a specialist in that function. A functional head directs his subordinates in his particular area.

**F.W. Taylor** developed the concept of 'functional organisation', which is based on various important functions of an enterprise. This approach lays emphasis on the principle of specialisation and tries to bring about organisational balance. Here, the whole work of an enterprise is divided into various departments based on vital functions. Similar types of activities are put in one department under the control of a departmental manager. A subordinate anywhere in the organisation will be controlled and commanded directly by a number of managers operating in different departments.



#### 3.44.1. Suitability of functional organisation

The functional structure of an organisation is most suited under the following situations :

- (i) Where there is need and scope for too much specialisation.

- (ii) Where every employee understands his job clearly for its efficient performance.
- (iii) Where economy is brought about by avoiding duplicity of work.
- (iv) Where it promotes professional achievement that satisfies the specialists.
- (v) Where there is possibility of effective co-ordination and control to assure quick decisions.



### 3.44.2. Features of functional organisation

The main characteristics of a functional organisation are as follows :

- (i) **Creation of departments** : Activities of an enterprise are grouped into different departments on the basis of their functions.
- (ii) **Degree of specialisation** : Each functional department is headed by a manager who has specialised knowledge of that particular function.
- (iii) **Three forms of authority** : Three forms of authority (i.e, line authority, functional authority and advisory authority) exist together. The functional head will exercise final authority over that function (irrespective of the department at which the said function is being performed).
- (iv) **Broken unity of command** : This principle may not be followed as the subordinate may get instructions not only from his immediate superior but also from bosses in other departments.
- (v) **Operational complexity** : This is a complex type of organisation. It is based on the principle of specialisation. A number of specialists work together and all of them have authority over all the workers.
- (vi) **Suitability** : It is very expensive to operate. As a result, it is suitable only for large enterprises.
- (vii) **Work-load of managers** : The work-load is more for those managers who are entrusted with functional authority in addition to their respective authority.



### 3.44.3. Advantages (or merits) of functional organisation

Functional organisation offers the following advantages :

- (i) **Full use of expertise** : It enables the organisation to make full use of expertise and specialised knowledge for performing various functions. A functional manager is an expert in his area.
- (ii) **Prompt decision-making** : It facilitates prompt decision-making, as the required authority with regard to his particular activity, is delegated to the departmental head.
- (iii) **Increase in efficiency** : It ensures enhanced efficiency, as the workers operate under the supervision of expert and competent personnel.
- (iv) **Scope for expansion** : It offers greater scope for the expansion of a business enterprise, as each employee grows in his own speciality. This enables the organisation to grow according to the needs of the situation.
- (v) **Economy of operation** : It permits maximum degree of specialisation and thereby securing various economies. The use of specialist helps in reducing waste of materials, money and time.
- (vi) **Flexible pattern** : It is a flexible pattern of organisation. It allows changes in the organisation without disturbing its whole work.
- (vii) **Standardisation** : It facilitates standardisation of operations, methods and equipment. As a result, consistency and uniformity can be maintained with regard to functioning of various departments.

(viii) **Boosting morale of employees** : It motivates workers to enter deep into their work and make suggestions for work improvement. This boosts the morale of employees.

#### 3.44.4. Disadvantages (or demerits) of functional organisation

The following difficulties are encountered in a functional organisation :

- (i) **Complex relationship** : A single worker is working under different specialists in a functional organisation. It is very difficult for the worker to be responsible to all specialists (i.e. superiors).
- (ii) **Ineffective co-ordination** : The extent of authority of a specialist is not correctly defined. The appointment of several specialists creates problems of co-ordination, especially when the advice of more than one is needed.
- (iii) **Conflict in authority** : The principle of 'unity of command' is violated in functional organisation. A subordinate is accountable to many superiors for his assigned task. As a result, the worker gets confused and is unable to decide as to whom he is accountable.
- (iv) **Lack of responsibility** : It is very difficult for the top management to fix and locate the responsibility of a particular employee. As a result, the management is not in a position to charge an employee if there is any fault in the performance of his work.
- (v) **Poor discipline** : Diffusion of authority comes in the way of effective control. Multiple lines of command tend to weaken discipline and create friction. The loyalty of workers becomes divided. Consequently, discipline tends to break down.
- (vi) **Delayed decisions** : The speed of action of the workers tends to be hampered because of division of control. It sags and slows down the process of decision making. The decisions are delayed as each specialist is to give his opinion.
- (vii) **Increase in overhead charges** : This pattern of organisation is quite expensive in terms of time, treasure and talent. It multiplies the number of specialists which results in a rise in overhead charges. Only financially strong organisations can afford such lavish spending.
- (viii) **Bane of specialisation** : Differences of opinion and conflict of interest between line and staff officers will defeat the very purpose of specialisation.

Home assignment :

1. Differentiate between functional organization and divisional organization.
2. Explain the advantage and disadvantage of line organization.

**CLASS - 12**  
**COMPUTER SCIENCE**  
**DATA STRUCTURES**

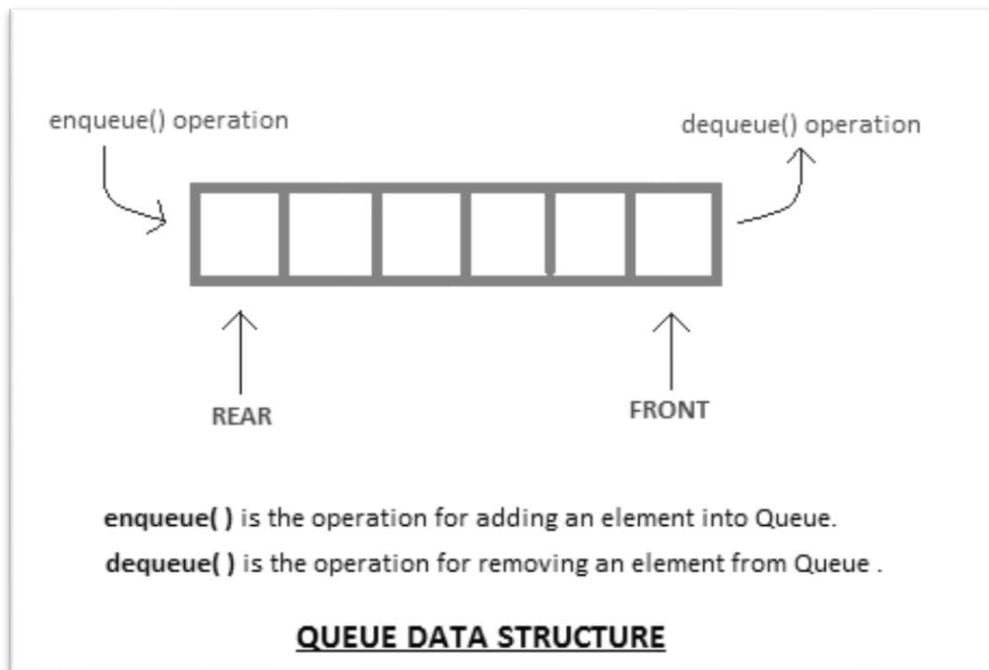
**Queue:**

Queues are also another type of abstract data structure. Unlike a stack, the queue is a collection of objects that are inserted and removed according to the **first-in-first-out (FIFO)** principle. In a FIFO data structure, the first element added to the queue will be the first one to be removed.

For example, people waiting in line for a rail ticket form a queue. Another good example of a queue is any queue of consumers for a resource where the consumer that came first is served first.

A queue enables insert operations to be performed at one end called **rear** and delete operations to be performed at another end called **front**.

The Queue interface is available in java.util package and extends the Collection interface.



Since insertion and deletion both takes place from different ends, we have to keep record of the index of both the front as well as the rear end.

Consider a queue implemented using an array  $Q[ ]$ . The index of the front (first) element is stored in the variable 'front' and index of the last element is stored in the variable 'rear'.

Let the size of the queue be denoted by the variable 'size'. In our example, the value of 'size' = 5.

Initially the values of 'front' and 'rear' are 0. So insertion will start from index zero.

### Inserting element in the queue:

Since insertion in a queue takes place from the rear end, hence, the first element which you insert in the queue must go to the rear end which is at index '0' after which the value of 'rear' should increase from 0 to 1 to accommodate the next element.

Similarly, when we insert the next element, after insertion, the value of 'rear' should increase from 1 to 2 and so on.

Now when the last element is inserted at index 4, the value of 'rear' changes from 4 to 5. We now see that the queue is full and no more element can be inserted. This situation is known as 'OVERFLOW'.

While inserting element in the queue, always remember to check for a condition where the queue is full and no more element can be inserted.

<b>Queue Elements</b>					
<b>Index</b>	0	1	2	3	4
	front, rear				

Initial state of the Queue

<b>Queue Elements</b>	50				
<b>Index</b>	0	1	2	3	4
	front	rear			

After inserting 1st element

<b>Queue Elements</b>	50	70			
<b>Index</b>	0	1	2	3	4
	front		rear		

After inserting 2nd element

<b>Queue Elements</b>	50	70	90	100	120
<b>Index</b>	0	1	2	3	4
	front				

rear = 5

Overflow Condition (Queue Full)

So, **if(rear == size)** then OVERFLOW will occur and you cannot insert any more element. In all other cases you can insert, by first inserting at the rear end and then increasing the 'rear' index.

**while inserting, 'rear' index increases.**

### **Programming Code Implementing Insertion Operation:**

```
void insert(int v) // Function to insert element in Queue
{
    if(rear == size) // Condition for Overflow
    {
        System.out.println("OVERFLOW");
    }
    else
    {
        Q[rear] = v; // Storing value in Queue
        rear = rear + 1;
    }
}
```

### **Deleting element from the queue:**

The first element which you delete will be from the 'front' index (following the FIFO pattern). Before deleting, save the element to be deleted and print (or return it). After that, the value of 'front' index should increase from 0 to 1.

Similarly, when we delete the next element, the value of 'front' should increase from 1 to 2 and so on.

Now, when the value of 'front' and 'rear' becomes equal, there will be no element in the queue. So, we re-set their values to 0 to denote that the queue is now in its initial state (empty). So now no more element can be deleted. This situation is known as 'UNDERFLOW'.

While deleting element from the queue, always remember to check for a condition where the queue is empty and no more element can be deleted.

Queue Elements		70	90	100	120
Index	0	1	2	3	4
		front			

rear = 5

After deleting 1st element

Queue Elements			90	100	120
Index	0	1	2	3	4
			front		

rear = 5

After deleting 2nd element

Queue Elements					
Index	0	1	2	3	4

rear = 5  
front = 5

After deleting every element

Queue Elements					
Index	0	1	2	3	4
	front, rear				

Initial state of the Queue (Underflow Condition)

So, **if(front == 0 && rear == 0)** then UNDERFLOW will occur and you cannot delete any more element. In all other cases you can delete, by increasing 'front'.

**while deleting, 'front' index increases.**

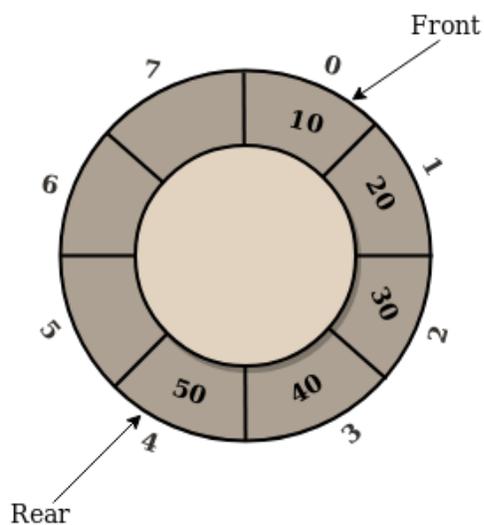
### Programming Code Implementing Deletion Operation:

```
int delete() // Function to delete element from Queue
{
    if(front == 0 && rear == 0) // Condition for Underflow
    {
        System.out.println("UNDERFLOW");
    }
    else
    {
        int val = Q[front]; // Storing the element which will be removed
        front = front + 1;
        if(front == rear) // Condition for emptying the Queue
        {
            front = 0;
            rear = 0;
        }
    }
}
```

```
        return val;  
    }  
}
```

## **Circular Queue:**

Circular Queue is a linear data structure in which the operations are performed based on FIFO (First In First Out) principle and the last position is connected back to the first position to make a circle.



In a normal Queue, we can insert elements until queue becomes full. But once queue becomes full, we cannot insert the next element even if there is a space in front of queue.

### **Operations on Circular Queue:**

- 1.) Front:- Get the front item from the queue.
- 2.) Rear:- Get the last item from the queue.
- 3.) enqueue(item):- This function is used to insert an element with value item in the queue.
- 4.) dequeue():- This function is used to remove an element from the front of the queue.

## **ASSIGNMENT VII PART - 2**

4. Define queue.
5. Differentiate between LIFO and FIFO.

HW

① Evaluate:  $\sin \left[ 2 \cos^{-1} \left( -\frac{3}{5} \right) \right]$

② Find  $\lim_{x \rightarrow 0} \frac{\log(1+x^3)}{\sin^3 x}$

③ Find the inverse of  $A = \begin{bmatrix} 2 & 5 \\ 3 & 7 \end{bmatrix}$

④ If  $x^y = e^{x-y}$ , prove that  $\frac{dy}{dx} = \frac{\log x}{(1+\log x)^2}$

⑤ Solve:  $\tan(\cos^{-1} x) = \sin(\tan^{-1} 2)$

⑥ Using determinants, find the area of the triangle whose vertices are  $(-2, 3)$ ,  $(3, 2)$ ,  $(-1, -8)$ .

⑦ If  $x, y, z$  are all different and

$$\begin{vmatrix} x & x^2 & 1+x^3 \\ y & y^2 & 1+y^3 \\ z & z^2 & 1+z^3 \end{vmatrix} = 0, \text{ Show that}$$

$$xyz = -1.$$

⑧ Solve by Martin's rule (~~matrix~~ matrix method)

$$2x + y - 3z = 13$$

$$x + y - z = 6$$

$$2x - y + 4z = -12$$

DREAMLAND SCHOOL  
BIOLOGY - CLASS 12 (2020 -2021)  
ASSIGNMENT

DATE – 20/05/2020

**CHAPTER – REPRODUCTIVE HEALTH**

**EXPLANATION**

• **WHAT IS REPRODUCTIVE HEALTH?**

- The term simply refers to healthy reproductive organs with normal functions.
- However, it has a broader perspective & includes the emotional & social aspects of reproduction also.
- According to World Health Organization (WHO), reproductive health means a total well-being in all aspects of reproduction, i.e., physical, emotional, behavioural & social.
- Therefore, a society with people having physically & functionally normal reproductive organs & normal emotional & behavioural interactions among them might be called reproductively healthy.

• **PROBLEMS ASSOCIATED WITH REPRODUCTIVE HEALTH**

1. Lack of awareness in the people.
2. A number of myths & misconception about sex related aspects.
3. Common occurrence of sexually transmitted diseases.
4. Rapid increase in human population.
5. Illegal abortion of female foetus.

• **PROGRAMS OF REPRODUCTIVE HEALTH**

- ❖ India was amongst the first countries in the world to initiate action plans & programmes at a national level to attain total reproductive health as a social goal.
  - These programs called ‘**family planning**’ were initiated in 1951.
  - Family planning is the most effective method to bring down the birth rate. The family size should be restricted to two children per couple.
- ❖ Improved programmes covering wider reproduction related areas are currently in operation under the popular name ‘**Reproductive & Child Health Care –(RCH ) programmes**’.
  - Creating awareness among people about various reproduction related aspects & providing facilities & support for building up a reproductively healthy society are the major tasks under these programmes.
  - With the help of audio visual & the print media governmental & non-governmental agencies have taken various steps to create awareness among the people about reproduction related aspects.
  - Introduction of sex education in schools should also be encouraged to provide right information to the young so as to discourage children from believing in myths & having misconception about sex-related aspects.
  - Proper information about reproductive organs , adolescence & related changes, safe & hygienic sexual practices, STDs , AIDS, etc would help people specially those in the adolescent age group to lead a reproductively healthy life.
  - Educating people, especially fertile couples & those in marriageable group , about available birth control options , care of pregnant mothers, post natal care of the mother & child, importance of breast feeding , equal opportunities for the male & female child, etc , would address the importance of bringing up socially conscious healthy families of desired size.

→ Awareness of problems due to uncontrolled population growth , social evils like sex abuse & sex related crimes need to be created to enable people to think & take up necessary steps to prevent them & thereby build up a socially responsible & healthy society.

### **STEPS TAKEN TO MAINTAIN A REPRODUCTIVELY HEALTHY SOCIETY**

- Successful implementation of various action plans to attain reproductive health requires strong infrastructural facilities, professional expertise & material support.
- These are essential to provide medical assistance & care to people in reproduction related problems like pregnancy , deliver, STDs , abortion, contraception , etc .
- Statutory ban on Amniocentesis for sex determination to legally check increasing menace of female foeticides , massive child immunization are some programmes that merit mention in this connection.
- MTP was legalized in 1971 to decrease the population size.

### • **POPULATION EXPLOSION**

- In the last century an all round development in various fields significantly improved the quality of life of the people.
- However increased health facilities along with better living condition had an explosive impact on the growth of population.
- The world population which was around 2 billion in 1900 rocketed to about 6 billion by 2000 & 7.2 billion in 2011.
- A similar trend was observed in india too. Our population which was approximately 350 million at the time of our independence reached close to the billion mark by 2000 & crossed 1.2 billion in may 2011.
- A rapid decline in death rate, maternal mortality rate (MMR) & infant mortality rate (IMR) as well as increase in number of people in reproductive age are probable reasons for this.
- Through our RCH programme , though we could bring down the population growth rate , it was only marginal.
- Such an alarming growth rate could lead to an absolute scarcity of even the basic requirements.
- **Therefore the government was forced to take up serious measures to check this population growth rate.**
  1. The most important step to overcome this problem is to motivate smaller families by using various contraceptive methods. Many couples mainly the young, urban , working ones have even adopted an ‘ one child norm’ . (Family Planning)
  2. Statutory raising of marriageable age of the female to 18 years & that of male to 21 years & incentives given to couples with small families is another method taken by government to control population explosion.
  3. People , more particularly those of the reproductive age should be educated of the advantages of small family & the ill effects of large families & overproduction. Thus spreading awareness.

### • **CONTRACEPTIVE METHODS**

Contraceptive methods work on the principle of avoiding chances of meeting of sperm & ovum. An ideal contraceptive should be user-friendly, easily available, effective & reversible with no or least side effect. It should no way interfere with the sexual act of the user. It can be obtained by various methods.

#### ➤ **NATURAL METHODS**

##### **1. Periodic abstinence**

It is a method in which the couples avoid or abstain from coitus from day 10 to 17 of menstrual cycle when ovulation could be expected. As chances of fertilization are very high during the period , it is called fertile period. Therefore by abstaining from coitus during this period, conception could be prevented.

**2. Withdrawal or coitus interruption**

It is another method in which the male partner withdraws his penis from the vagina just before ejaculation so as to avoid insemination.

**3. Lactational amenorrhea (absence of menstruation)**

This method is based on the fact that ovulation & therefore the cycle do not occur during the period of intense lactation following parturition. Therefore as long as the mother breast-feed the child fully, chances of conception are almost nil.

However this method has been reported to be effective only upto a maximum period of six months following parturition.

As no medicines or devices are used in these methods , side effects are almost nil. Chances of failure of this method is also high.

### AMNIOCENTESIS

In amniocentesis , some of the amniotic fluid is taken out from the developing foetus to analyze the foetal cells and dissolved substances. This procedure is used to test for the presence of certain genetic disorders such as Down syndrome, haemophilia, sickle cell anaemia & to determine the survivability of the foetus.

Amniocentesis has been presently misused , since with its help it is easy to establish the sex of the foetus & female foetus are ruthlessly destroyed.

### ASSIGNMENT 5 -

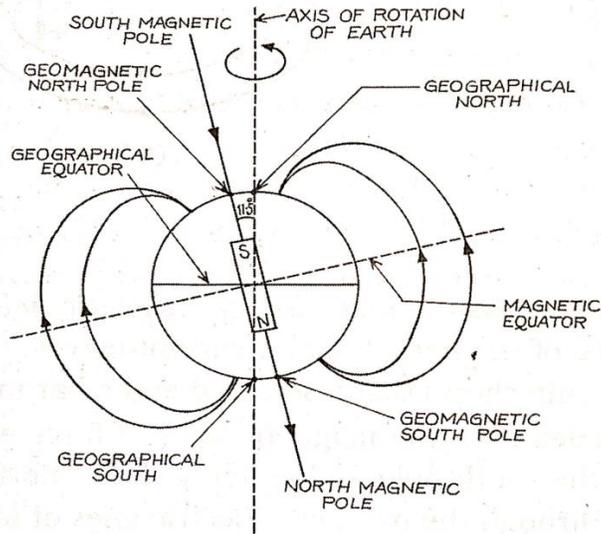
- 1) State & explain two task undertaken by RCH.
- 2) What Is reproductive health?
- 3) What is amniocentesis? How is it misused?
- 4) State one measure taken by government to control population explosion.
- 5) How is periodic abstinence used as a natural contraceptive method?

DATE-20.05.2020 (WEDNESDAY)

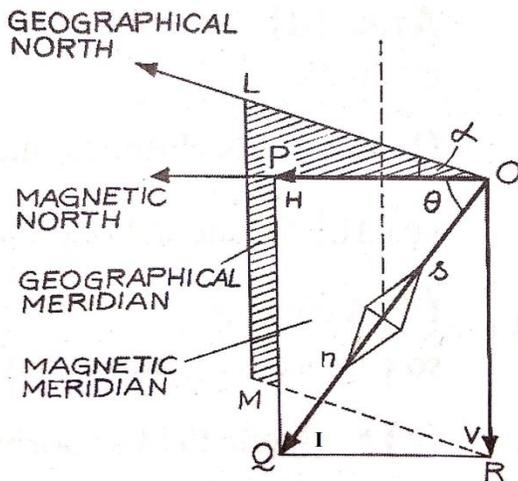
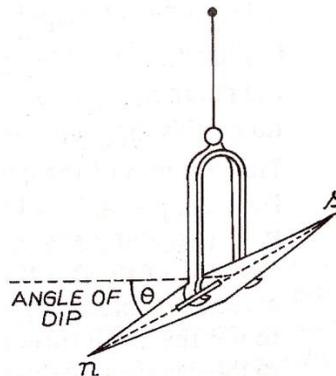
CLASS-XII

SUBJECT-PHYSICS

CHAPTER-9: MAGNETIC FIELD AND EARTH'S MAGNETISM (2<sup>nd</sup> CLASS)



GEOGRAPHICAL AND GEOMAGNETIC AXIS OF EARTH



- ◆ If the angle of dip at a place be  $\theta$  and the magnitude of the intensity of earth's magnetic field be  $I$ , then vertical component of earth's magnetic field,  $V = I \sin \theta$  and its horizontal component  $H = I \cos \theta$ .

In this case,  $V = H \tan \theta$

$$\tan \theta = \frac{V}{H}$$

earth's magnetic field  $I = \sqrt{V^2 + H^2}$

DATE-20.05.2020 (WEDNESDAY)

CLASS-XII

SUBJECT-PHYSICS

ASSIGNMENT-10

CHAPTER-9: MAGNETIC FIELD AND EARTH'S MAGNETISM (2<sup>nd</sup> CLASS)

(F.M.-10)

*Answer the following questions*

*(Question No-1 carries 1 mark, 2 carries 2 marks, 3 carries 3 marks, 4 carries 4 marks)*

1. Do the earth's magnetic elements at a particular place vary as time passes?
2. What is the difference between angle of declination and angle of dip?
3. A magnetized needle in a uniform magnetic field experiences a torque but no net force. An iron nail near a bar magnet, however, experiences a force of attraction in addition to a torque. Why?
4. If the ratio of horizontal component of earth's magnetic field to the resultant magnetic field at a place is  $1/\sqrt{2}$ , what is the angle of dip at that place? Calculate the magnitude of vertical component of earth's magnetic field if horizontal component is 2.5 T.

---

Tanmoy Rana