## Section-3

Ans-2 Ventilation :-

(i) Ventilation may be defined as supply of fresh outside air into an enclosed space or the removal of inside air from the enclosed space.

(ii) In other words, ventilation is the removal of all vitiated air from a building and its replacement with fresh air.

(iii) Ventilation may be acheived either by natural or by artificial means.

Factors: Following are the factors affect the ventilation:

* Air changes:

(i) The rate of air change will depend upon the volume of structure, type of activity the premises, number of persons occupying the premises, etc.

(ii) It will also depend on the velocity of incoming fresh air and quantity of heat, moisture and odour present in the room.

(iii) The ventilating system as a whole should be such that there is smooth movement of air currents and that there is no stagnation of air at any spot in the room.

* Humidity :

(i) The criteria of relative humidity of air also affect the ventilating system of the structure.

(ii) For working at temperature of 21°C, a range of 30 to 70 per cent of relative humidity is desirable.

(iii) The values of relative humidity is obtained by comparing dry bulb and wet bulb temperatures, the low humidity and greater air movement are necessary for removing greater portion of heat from the body.

* Quality of Air :-

(i) The purity of air plays an important role in the comfort of persons affected by ventilation system.

(ii) The air should be free from odours, organic matter, inorganic dust and unhealthy fumes of gases such as carbon monoxide, carbon dioxide, etc.

(iii) The ventilating system should be so designed that it gives comfort to the occupants by giving pure air.

* Temperature :-

(i) It is quite evident that the incoming air for ventilation should be cool in summer and warm in winter before it enters the room.

(ii) The popular values of effective temperature in winter and summer are 20°C and 22°C respectively.

* Use of Building

The quantity of fresh air to be supplied to a room depends on the use of building and it is to be decided by taking into consideration various factors such as number of occupants types of activity, period of working age or occupant, etc.

Some points should be kept in mind while planning Ventilation in public building :-

(i) It should admit required amount of fresh air in the room.

(ii) It should effectively extract the vitiated air from the room. All the corners of the room should get proper ventilation.

(iii) The value of desired relative humidity should be maintained.