Question 4. How does chemical coordination occur in plants?
Solution:
It has been found that the growth of plants is regulated by certain chemical substances which are synthesized by the plants in very small amounts. These are known as plant hormones or phytohormones.

They are the organic substances which either promote or inhibit growth. A phytohormones can be defined as a chemical substances which are produced naturally in plants and are capable of translocation and regulating one or more physiological processes when present in low concentration. Main categories of plant hormones are:

1. Auxins
2. Gibberellins
3. Cytokinins
4. Ethylene
5. Abscisic acid

Auxins and Gibbrerellins stimulate cell elongations, cytokinins stimulate cell division ethylene promotes transverse or isodiametric growth and abscisic acid is a growth inhibitor.

Question 5. What is the need for a system of control and coordination in an organism?
Solution:
Co-ordination in this sense refers to the regulation or control of body activity.
Plants need very little in the way of a control system. Since growth and reproduction are about the only things that are regulated, a rapid control system is not required and hormonal control is all they possess.

Animals are continually moving through new environments that may pose all types of changes and threatening situations to the organism. This requires the rapid and precise control of a nervous system. Hormones regulate slower activities, such as growth, development and reproduction.

Question 6. How are involuntary actions and reflex actions different from each other?
Solution:
All reflex actions are involuntary in nature but all involutary actions are not reflexes as the beating of heart is an involuntary action but is not reflex action.

Reflex actions are very quick but all involutary actions may not be very fast as in heart beating.
A reflex action may involve any muscle or a gland as we withdraw our hand on touching a hot object but all involuntary actions involve only smooth i.e., involuntary or cardiac muscles.

Reflex actions are at the level of spinal cord whereas the involuntary actions generally involve brain too.
Nerves and autonomious nervous system can increase or decrease the rate of involuntary actions but reflex actions can be controlled

by great will only and are not usually controllable.

Reflex actions are done to meet emergencies where as an inverse action may or may not be for just meeting an emergency but may be a critical lie process as circulation of blood, swallowing of food, movement of food in food pipe, etc.

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