

(b) Enlist four important components of poultry farm management. [3]

Answer : (a) Ducks, turkey, geese etc.

- (b) 1. Selection of disease free and suitable breeds.
 2. Proper and safe farm conditions.
 3. Proper food and water.
 4. Maintenance of hygiene and health care.

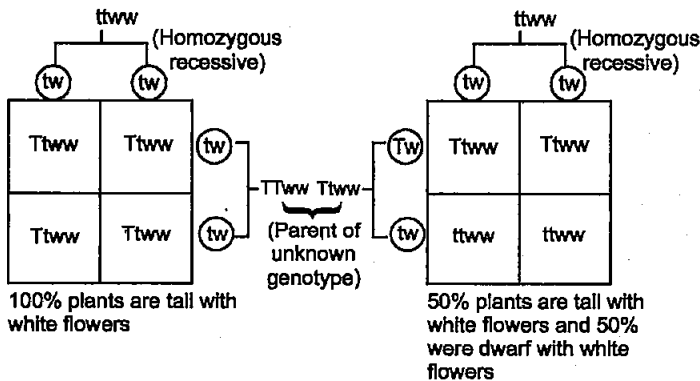
18. Explain with the help of suitable examples the three different ways by which organisms overcome their stressful conditions lasting for short duration. [3]

Answer : Three different ways are :

- Migration** : Organisms can move away temporarily from stressful habitat to a more hospitable area and return when stressful period is over. *E.g.*, humans moving from Delhi to Shimla during summer.
- Spore Formation** : Various kinds of thick walled spores are formed which germinate on availability of suitable environment, *e.g.*, bacteria, fungi etc.
- Dormancy** : Seeds or Vegetative reproductive structures help to tide over stress by reducing their metabolic activity, *e.g.*, seeds or vegetative reproductive structures of higher plants.

22. How would you find genotype of a tall pea plant bearing white flowers ? Explain with the help of a cross. Name the type of cross you would use. [3]

Answer : Test cross should be used.



SECTION-E

24. Answer the following questions based on Hershey and Chases's experiments : [5]

(a) Name the kind of virus they worked with and why?

(b) Why did they use two types of culture media to grow viruses in ? Explain.

(c) What was the need for using a blender and later a centrifuge during their experiments ?

(d) State the conclusion drawn by them after the experiments.

OR

(a) How did Darwin explain adaptive radiation ? Give another example exhibiting adaptive radiation.

(b) Name the scientist who influenced Darwin and how ?

Answer : (a) They worked with bacteriophage which infect bacteria because they wanted to discover whether it was protein or DNA from the viruses that entered the bacteria.

(b) They used two types of culture media in order to make protein of viruses radioactive with the help of ³⁵S in one case, and DNA molecule in virus radioactive by using ³²P in the other case. This was done to identify which one of the two had entered into the bacteria during viral infection.

(c) Blender was used to separate viral protein coats that were still attached to the surface of bacteria.

Centrifuge was used to separate lighter supernatant containing viral protein coats from denser residue containing bacteria.

(d) They concluded that DNA is the genetic material that is passed from virus to bacteria.

OR

(a) Darwin observed that from original seed eating features in finches, altered beaks arose enabling them to become insectivorous and vegetarian finches.

Adaptive Radiation : Is the process of evolution of different species in a given geographical area starting from a point and literally radiating to other areas of geography.

e.g., Australian marsupials, placental mammals in Australia.

(b) **Thomas Malthus**. Population size grows exponentially. However population size remains limited due to limited natural resources leading to competition.