

HOTS (Higher Order Thinking Skills)

Q. 1. What do you mean by hypophysation? What are its advantages?

Ans. Hypophysation includes the extraction of hormones from the pituitary glands of donor fishes and injecting the same to Carps in captivity, ie., either in hatchery or ponds.

Advantages:

(i) Carps breed in rivers and not in captivity. By hypophysation, Carps can be made to breed in captivity.

(ii) We get healthy and pure seeds for fish farming, which ensures the supply of the same in desired quantity.

Q. 2. If there is low rainfall in a village throughout the year, what measures will you suggest to the farmers for better cropping?

Ans. For better cropping in low rainfall areas, farmers can be suggested to:

(a) Practice farming with drought-resistant and early maturing varieties of crops.

(b) To enrich the soil with more humus content as it increases the water-holding capacity and retains water for longer duration.

Q. 3. Group the following and tabulate them as energy yielding, protein yielding, oil yielding and fodder crop.

Wheat, rice, berseem, maize, gram, oat, pigeon gram, sudan grass, lentil, soyabean, groundnut, castor and mustard.

Ans. 1. Energy yielding - wheat, rice, maize

2. Protein yielding - gram, pigeon gram, lentil, soyabean

3. Oil yielding - groundnut, castor, mustard, soyabean

4. Fodder crops - berseem, oat, sudan grass

Q. 4. Arrange these statements in correct sequence of preparation of green manure.

(a) Green plants are decomposed in soil.

(b) Green plants are cultivated for preparing manure or crop plant parts are used.

(c) Plants are ploughed and mixed into the soil.

(d) After decomposition it becomes green manure.

Ans. (b) → (c) → (a) → (d)

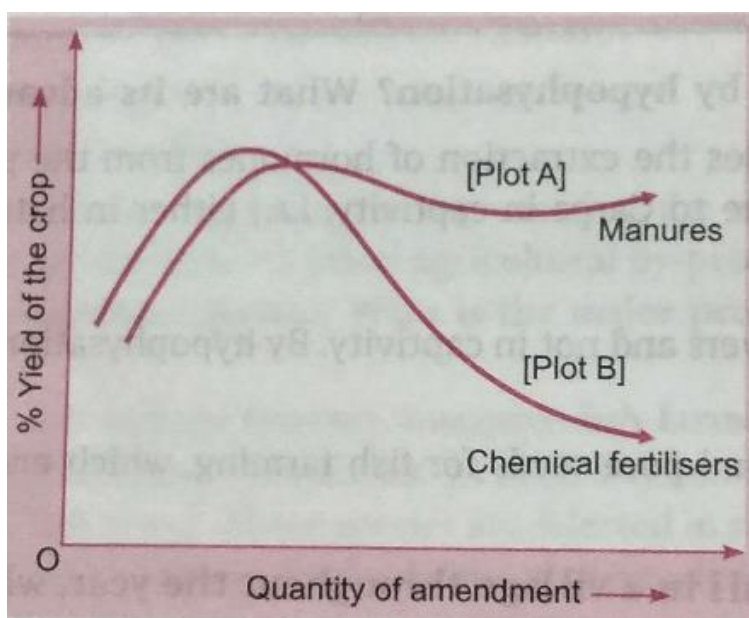
Q. 5. What would happen if poultry birds are larger in size and have no summer adaptation capacity? In order to get small-sized poultry birds having summer adaptability, what method will be employed?

Ans. Maintenance of temperature is needed for better egg production by poultry birds. Therefore, larger size (increase in surface area of body) and no adaptability of summer may cause decline in egg production. To obtain smaller size and higher summer adaptability, cross-breeding of poultry birds are done. Small size is also needed for better housing and low feed.

Q. 6. Figure shows the two crop fields [plots A and B] have been treated by manures and Chemical fertilisers respectively, keeping other environmental factors same.

Observe the graph and answer the following questions.

- (i) Why does plot B show sudden increase and then gradual decrease in yield?**
- (ii) Why is the highest peak in plot A graph slightly delayed?**
- (iii) What is the reason for the different pattern of the two graphs?**



Ans. (i) With the addition of chemical fertilisers there is sudden increase in yield due to release of nutrients N,P,K, etc. in high quantity. The gradual decline in the graph may be due to continuous use and high quantity of chemicals which kills microbes useful for replenishing the organic matter in the soil. This decreases the soil fertility.

(ii) Manures supply small quantities of nutrients to the soil slowly as it contains large amounts of organic matter [Hint: Importance of organic matter can be included]. It enriches soil with nutrients; thereby increasing soil fertility continuously.

(iii) The differences in the two graphs indicate that use of manure is beneficial for long duration in cropping as the yield tends to remain high when the quantity of manure increases.

In case of plot B the chemical fertilisers may cause various problems when used continuously for long time. Loss of microbial activity reduces decomposition of organic matter and as a result, soil fertility is lost that affects the yield.