III. Short Answer Type Questions
Question 1. What are the major group of activities involved for improving of crop yields?
Answer:

- Crop variety improvement
- Crop production improvement
- Crop protection improvement

Question 2. What are the different ways/ methods of hybridisation?
Answer: Hybridisation can be

- Intervarietal - between different varieties of crops
- Interspecific - between two species of same genus
- Intergeneric - between two different genera

Question 3. What are the main characters required in a crop during its improvement practices?
Answer: The useful characters that are required in a crop during its improvement:
(a) Disease resistance (b) Response to fertilizer
(c) Product quality and (d) High yield.

Question 4. State the difference between macro-nutrients and micro-nutrients.
Answer:

Macro-nutrients	***Micro-nutrients***
1. These are required by crops in larger quantity. 2. ***Six*** macro-nutriets are: Nitrogen, phosphorus, potassium, calcium, magnesium and sulphur.	1. These are required by crops in very small quantity. 2. **Seven** micro-nutrients are : Iron, manganese, boron, zinc, copper, molybdenum and chlorine.

Question 5. How do deficiency of nutrients affect the crop?
Answer: Deficiency of any nutrient affects physiological processes in plants including reproduction, growth and susceptibility to diseases.

Question 6. State the difference between manure and fertilizer.
Answer:

Manure	***Fertiliser***
1. It consists of organic matter. 2. Prepared from animal excreta and plant waste. 3. Its use causes no pollution.	1. It consists of inorganic matter. 2. It is prepared commercially from chemicals. 3. It causes pollution in soil and water.

Question 7. What are the harmful effects of fertilizer? .
Answer. It causes soil and water pollution. Continuous use can also destroy soil fertility.

Question 8. What is organic farming?
Answer: It is the farming in which no chemical fertilizers, pesticides or herbicides are used. But uses all organic matter for its growth like manure, neem leaves as pesticides and for grain storage.

Question 9. State the preventive and control measures used before grains are stored.

Answer:

- Cleaning of the grains
- Proper drying of the produce in sunlight, there should be no moisture.
- Fumigation of produce using chemicals that kills pest.

Question 10. Name few varieties of bees used for commercial honey production.
Answer:
Apis cerana indica - Indian bee
A. dorsata - rock bee (local varieties)
A. florae - the little bee
A. mellifera - Italian bee variety

Question 11. What decide the quantity and quality of honey production in apiary?
Answer: For quality of honey: The pasturage, f.e., the kind of flowers available to the bees for nectar and pollen collection will determine the taste of the honey. For quantity of honey: Variety of bee used for the collection of honey. For example, A. mellifera is used to increase yield of honey.

Question 12. How are crops useful to us? What do they provide?
Answer: Crops provide us food for our daily body nutrient.
Carbohydrate for energy
requirement - Cereals such as wheat, rice, maize.
Protein for body building — Pulses like gram, lentil
Fats for energy — Oil seed like mustard, sunflower
Vitamins and minerals — From vegetables, spices and fruits
Fodder crops — For livestocks

Question 13. What are the factors for which variety improvement of crop is done?
Answer:
(a) Higher yield: It increases production of crop.
(b) Biotic and abiotic resistance: Crop should be resistant to biotic factors
like diseases, insects, pests and abiotic factor like drought, salinity, heat, cold, frost and water logging.
(c) Change in maturity duration: Short-duration maturity allows farmer to grow more crops in a year and reduces the cost of crop production.
(d) Wider adaptability: Crop'should be able to adapt to changing environmental conditions.
(e) Desirable agronomic characteristics: The tallness and dwarfness of crop. Dwarfness is required for cereals, so that less nutrients are consumed.

Question 14. Name the sources and the nutrients supplied by them to the plants.
Answer:

Source	**Nutrients**
Air	Carbon, oxygen
Water	Hydrogen, oxygen
Soil	**Macro-nutrients** (six)
	Nitrogen, phosphorus, potassium, calcium, magnesium, sulphur
	Micro-nutrients (seven)
	Iron, manganese, boron, zinc, copper, molybdenum, chlorine

Question 15. What are manures? Give its classification.
Answer: Manures contain large ‘ quantities of organic matter and supplies small quantities of nutrients to the soil. It is prepared naturally by the decomposition of animal waste, excreta and plant waste.

- It helps in the soil enrichment with nutrients.
- It helps in improving the soil structure.
- It helps in increasing the water holding capacity in sandy soils.
- In clayey soils it helps in the water drainage and prevent water logging. Manure is classified based on the kind of biological material used to make it as : (i) Compost (ii) Vermi-compost (iitj Green manure
  (i) Compost: The farm waste and livestock excreta, along with vegetable waste, sewage waste, weeds, straws etc. are allowed to decompose in a pit is called compost. The compost is rich in nutrients.
  (ii) Vermi-compost: When the above given matter is allowed to decompose in the pit along with some earthworms, the decomposition speeds up and is called vermi-composting.
  (iii) Green manure: Some plants like sun-hemp or guar are grown and then mulched by ploughing them into the soil. This is done before the sowing of crop seeds into the field.
  These green plants present in the soil acts as green manure which enriches the soil in nitrogen and phosphorus.

Question 16. What are fertilizers? Excess use of fertilizers is not advisable, explain?
Answer: Fertilizers are obtained artificially on commercial basis. It is a chemical which contains the nutrients required for the crop to grow. Fertilizers supply various nutrients as they are nutrient specific e.g.-urea provides nitrogen. Mixed fertilizer provides any two mixture of nutrients. They are expensive but their use yield large production hence are a factor of high cost farming.
Excessive use of fertilizers are not advisable as:
(a) It leads to soil and water pollution.
(b) It can destroy the fertility of soil. As the soil is not replenished, micro¬organisms in the soil are harmed by fertilizers.

Question 17. What are the different patterns of cropping?
Or
What are the different cropping systems?
Answer: Different ways/patterns / systems of growing crop's are:
(a) Mixed cropping (b) Inter-cropping (c) Crop rotation.
Mixed cropping: It is a method in which two or more crops grow simultaneously on the same piece of land.
Example, Wheat + grain, wheat + mustard or groundnut + sunflower.
This helps in the reduction of risk factor and provides insurance against failure of one of the crops.
Inter-cropping: It is a method of growing two or more crops simultaneously on the same field in a definite patterns. A few row of one crop alternate with a few rows of second crop.
Example, soyabean + maize or bajra + lobia
Crop rotation: The growing of different crops on a piece of land in a pre¬planned succession is known as crop rotation.
The availability of moisture and irrigation facility decides the choice of crop to be cultivated after one harvest.

Question 18. How does insect pests attack the plant and affect it?
Answer: Insect pests attack the plants in three ways:

1. They cut the root, stem and leaf.
2. They suck the cell sap from various parts of the plant.
3. They bore into stem and fruits.

This way they affect the health of the crop and reduces yield.

Question 19. Give different methods of weed control.
Answer: Weeds can be controlled by different methods:
(a) Weedicides: These are the chemicals sprayed on the weeds to kill them. Excessive use is poisonous and causes environmental pollution.

(b) Mechanical removal: In this method weeds are uprooted by removing manually or by machines.
(c) Preventive methods: Proper seed bed preparation, timely sowing of crops, intercropping and crop rotation helps in weed control.

Question 20. What are the new variety/traits obtained by cross breeding of Indian and exotic breeds of poultry?
Answer: The new variety/traits obtained by cross breeding of Indian and exotic breeds of poultry are:

1. Number and quality of chicks
2. Dwarf broiler parent for commercial chick production
3. Summer adaptation capacity/tolerance to high temperature
4. Low maintenance requirements
5. Reduction in the size of the egg-laying bird with ability to utilise more fibrous and cheaper diet, formulated using agricultural by-products

Question 21. State the difference between egg-layers and broiler.
Answer:

Egg-layers	Broiler
1. They are fed on protein-rich feed.	1. They are fed on vitamin-rich supplementary feed for good growth rate.
2. Used for laying eggs.	2. Used for meat purposes. Lot of protein included in the diet.

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