Improvement in Food Resources: In-Text Questions

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Q.1 What do we get from cereals, pulses, fruits and vegetables?

Sol. (i) Cereals provide us carbohydrates. They provide energy.
(ii) Pulses give proteins.
(iii) Fruits and vegetables contains vitamins, minerals, proteins, fats and carbohydrates.

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Q.1 How do biotic and abiotic factors affect crop production?

Sol. The biotic factors such as pests, nematodes, diseases, etc. affects the production and reduce the net crop yield. The pest can damage the crops. For example, boll weevil is a type of pest on cotton. It attacks the cotton crop and reduces its yield. Weeds take the nutrients, light and space of the main crops and reduce crop productivity.
Similarly, abiotic factors such as salinity, temperature, humidity, moisture, wind rain, flood etc. reduces the crop production.

Q.2 What are the desirable agronomic characteristics for crop improvements?

Sol. The desirable agronomic characteristics for crop improvements are:
(i) Tallness and profuse branching are desirable characteristics for any fodder crop.
(ii) Dwarfness in cereals is the desirable characteristic so that less nutrients are consumed by these crops.

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Q.1 What are macro-nutrients and why are they called macro-nutrients?

Sol. Macro-nutrients are nutrients which are utilised in large quantities by plants for growth and development. Since they are required in large quantities, they are called macro-nutrient. The macro-nutrients are nitrogen, phosphorus, potassium, calcium, magnesium, and sulphur.

Q.2 How do plants get nutrients?

Sol. Plants require sixteen essential nutrients for their growth and development from the nature. All these essential nutrients are obtained from water, air and soil. The major nutrients are obtained from the soil. Some of nutrients (carbon, oxygen, and hydrogen) are obtained from air and water.

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Q.1 Compare the use of manure and fertilizers in maintaining soil fertility.

Sol. Use of manures increase soil fertility by adding organic matter and nutrients. Manure is prepared by the decomposition of animal excreta and plant wastes by decomposers. While, fertilizers are the inorganic compounds whose excessive use is harmful for the useful micro-organisms living in soil. Their excessive use also reduces soil fertility. So, fertilizers are good for only short term use.

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Q.1 Which of the following conditions will give the most benefits? Why?

(a) Farmers use high-quality seeds, do not adopt irrigation or use fertilizers.
(b) Farmers use ordinary seeds, adopt irrigation and use fertilizer.
(c) Farmers use quality seeds, adopt irrigation, use fertilizer and use crop protection measures.

Sol. (c) Farmers using good quality seeds, adopting irrigation, using fertilizers, and using crop protection measures will give most benefits. Because use of only good quality of seeds is not only enough without proper irrigation method, enriched with manure and fertilizers and protection from biotic factors.

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Q.1 Why should preventive measures and biological control methods be preferred for protecting crops?

Sol. Preventive measures and biological control methods should be preferred for protecting crops because over exposure of chemicals leads to environmental problems. These chemicals are poisonous and harmful for animals. Preventive measures are proper soil and seed preparation, sowing of seeds on time, inter cropping and mixed cropping etc. While, biological control methods consist of usage of bio-pesticides that are less toxic for the environment. An example of bio-pesticides is Bacillus thuringenes, which is an insect pathogen which kills a wide range of insect larvae. Thus, both preventive measures and biological control methods are the eco-friendly methods of crop protection.

Q.2 What factors may be responsible for losses of grains during storage?

Sol. The Biotic and abiotic factors are responsible for loss of grains during storage. These are:

1. **Abiotic factors**: Moisture (present in food grains), humidity (of air) and temperature, flood and wind etc.
2. **Biotic factors**: Insects, Rodents, Birds, pesticides, Mites and bacteria etc.

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Q.1 Which method is commonly used for improving cattle breeds and why?

Sol. Cattle farming is commonly used for improving cattle breeds. The purpose of cattle farming is to increase the production of milk and agricultural works such as carting, irrigation, tilling, etc. Dairy animals (females) are used for obtaining milk. Cross breeding between two good varieties of cattle will produce a new improved variety cattle. For example, the cross between foreign breeds such as Jersey Brown, Swiss which have long lactation periods and Indian breeds such as Red Sindhi, Sahiwal which have good resistance against diseases, produces a new variety which both the good qualities of both breeds.

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Q.1 Discuss the implications of the following statement: "It is interesting to note that poultry is India's most efficient converter of low fibre food stuff (which is unfit for human consumption) into highly nutritious animal protein food."

Sol. Poultry in India is the most efficient converter of low fibre food stuff into highly nutritious animal protein food. In poultry farming, domestic birds are used to produce eggs and chicken. For this, these birds are given animal feeds which mainly consist of roughage and fibres. Therefore, by feeding animals a fibre rich diet, the poultry gives good nutritious food in the form of eggs and chicken.

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Q.1 What management practices are common in dairy and poultry farming?

Sol. Common management practices in dairy and poultry farming are:

(i) Well-designed hygienic shelter and their regular cleaning.
(ii) Some basic required things such as clean water, nutritious food, etc.
(iii) Animals are kept in sunlight feasible, spacious, airy, and ventilated shelters.
(iv) Importance for animal health by prevention and cure of diseases at the right time is ensured.

Q.2 What are the differences between broilers and layers and in their management?

Sol. Layers are meant for poultry for egg production. Broilers are meant for poultry for meat purpose. Nutritional, environmental, and housing conditions for broilers are different from those required by egg layers. For proper growth of a broiler chicken requires vitamin rich supplements specially vitamin A and K and their diet includes protein rich food and enough fat. They also require extra care and maintenance in comparison to egg layers.

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Q.1 How are fish obtained?

Sol. Fish can be obtained by two ways:

(i) Capture fishing: In this process, fishes are obtained from natural resources.

(ii) Culture fishery: In this process, farming or culturing of fishes are done in both freshwater ecosystem (which includes river water, pond water) and marine ecosystem.

Q.2 What are the advantages of composite fish culture?

Sol. The main advantage of composite fish culture is increment of the yield of fish. In this method, combination of five or six different fish species are cultured together in a single fish pond. Fishes with different food habitats do not compete for food among themselves. Also, Food resource can be completely utilized in the pond. Due to this, the survival rate of fish increases and their yield also increases.

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Q.1 What are the desirable characters of bee varieties suitable for honey production?

Sol. The desirable characters of bee varieties suitable for honey production are:

(i) They should yield large quantity of honey.
(ii) They should not sting much.
(iii) They should stay in the beehive for a long period.
(iv) They should breed very well.
(v) They should have quality of diseases resistant.

Q.2 What is pasturage and how is it related to honey production?

Sol. Pasturage is defined as the availability of flowers to bees for easy collection of nectar and pollen. It is related to the taste and production of honey as it determines the quantity of honey.