Very Short Answer Type Questions

[1 Mark]

Q. 1. What has green revolution led to?

Ans. Increased food grain production.

Q. 2. What has white revolution led to?

Ans. Increased production and more efficient management of milk.

Q. 3. Name the two factors on which food security depends.

Ans. Availability of food and access to it.

Q. 4. What should we do for a sustained livelihood?

Ans. We should adopt practices like mixed farming, intercropping and integrated farming Practices.

Q. 5. Which food items primarily supply proteins?

Ans. Pulses like gram, peas, lentils, etc.

Q. 6. Name any two fodder crops.

Ans. Berseem and Sudan grass

Q. 7. What are photoperiods related to?

Ans. Duration of sunlight

Q. 8. What is the duration of kharif season

Ans. From the month of June to October

Q. 9. What is the duration of Rabi season?

Ans. From the month of November to April

Q. 10. Name two kharif crops.

Ans. Paddy and maize

Q. 11. Name two rabi crops.

Ans. Wheat and mustard

Q. 12. Name the three stages in which farming practices are divided.

Ans. (1) Choice of seeds (2) Nurturing of crop plants, and (3) Protection of the growing and harvested crops.

Q. 13. What is the name given to crops obtained by introducing a gene that provides the desired characteristic?

Ans. Genetically modified crops

Q. 14. Name any two factors for which crop variety improvement is done.

Ans. Higher yield and improved quality.

Q. 15. How many nutrients are essential for plants?

Ans. Sixteen.

Q. 16. What is FYM?

Ans. Farm Yard Manure

Q. 17. Name a biopesticide.

Ans. Neem

Q. 18. Why do droughts occur?

Ans. The scarcity or irregular distribution of rainfall causes droughts.

Q. 19. What is the main benefit of mixed cropping?

Ans. It reduces production risk and gives insurance against failure of all the crops.

Q. 20. Give an example of crops grown in two-year rotation.

Ans. Maize-potato-sugarcane-peas

Q. 21. Which one has more fat content-egg or meat?

Ans. Egg (12 per cent)

Q. 22. Name any two source of vitamin B2 and B12.

Ans. Milk and meat.

Q. 23. What are milch animals?

Ans. Milk producing females of dairy animals are called milch animals.

Q. 24. Name two foreign cattle breeds that are selected for long lactation periods.

Ans. Jersey and Brown Swiss.

Q. 25. Name two cattle breeds which show excellent resistance of diseases.

Ans. Red Sindhi and Sahiwal.

Q. 26. Mention two signs of a healthy animal.

Ans. A healthy animal feeds regularly and has a normal posture.

Q. 27. Name the internal parasites which affect the stomach, intestine and liver in cattle.

Ans. Stomach and intestine- Worms; Liver- Flukes.

Q. 28. Name two breeds of buffaloes.

Ans. Murrah and Mehsana.

Q. 29. Name one exotic breed of cattle.

Ans. Brown Swiss

Q. 30. Name a nutrient which is not present in fertilisers.

Ans. Iron

Q. 31. Name one oil yielding plant

Ans. Sunflower

Q. 32. What was blue revolution meant for?

Ans. For increase in fish production.

Q. 33. Why should beekeeping be done in good pasturage?

Ans. Beekeeping is done in good pasturage because good pasturage provides more quantity and quality of nectar for honey to the honeybees.

Short Answer Type Questions – I

[2 Marks]

Q. 1. Can increasing grain production alone solve the problem of malnutrition and hunger?

Ans. No, increasing grain production only for storage in warehouses cannot solve the problem of malnutrition and hunger. Food security depends both on availability of food and access to it. As the majority of our population depends on agriculture for their livelihood, increasing the incomes of people working in agriculture thus becomes necessary to combat the problem of hunger.

Q. 2. In agricultural practices, higher input gives higher yield. Discuss how?

Ans. Higher input means good financial conditions of the farmers so that they can employ good and improved farming technologies. Thus these would give higher yields.

Q.3. What happens due to deficiency of nutrients?

Ans. Nutrients are required by the plants for maintaining their health and every living process occurring in their bodies. Deficiency of nutrients affects the various physiological processes in plants like reproduction, growth, susceptibility to diseases, etc. and can ultimately lead to the death of plant.

Q. 4. How is culture of Pomphret and Mackeral different from that of Catla and Rohu?

Ans. Pomphret and Mackeral are marine fishes cultured in sea water called mariculture. Whereas Catla and Rohu are freshwater fishes grown in inland fisheries like ponds, canals, reservoirs and rivers called composite fish culture.

Q. 5. How is the use of manure beneficial for our environment?

Ans. Manure is beneficial because they help in:

(a) protecting the damage of environment from chemicals such as pesticides and fertilisers.

(b) recycling the biological wastes, i.e., animal excreta and plant wastes, thus preventing the accumulation of these things

Q. 6. What is green manure?

Ans. Some plants like sun hemp or guar are grown in the field prior to the sowing of the crop seeds. These are then mulched by ploughing them into the soil. These green plants gradually decompose and turn into green manure which helps in enriching the soil in nitrogen and phosphorus.

Q. 7. Name the two types of fish that come under fish production.

Ans. The two types of fish are:

(a) True fin fishes, i.e., fishes that have fins like carps, catla, mrigal, etc.

(b) Shellfishes like prawns, mollusks, echinoderms, etc.

Q. 8. What is honey?

Ans. Honey is a dense sweet liquid that contains 20-40 per cent sugar, 60-80 per cent moisture, 0.22-0.3 per cent minerals and 0.2-0.5 per cent vitamins. Apart from that, it also contains certain enzymes and pollen. Uses of honey are as follows:

(a) Honey has medicinal value specially in disorders that are related to digestion and liver ailments.

(b) As it contains iron and calcium, it also helps in the growth of the body.

(c) It is used as a source of sugar in various confectionery items.

Q. 9. Name two types of animal feed and write their functions.

Ans. The two types of animal feed are:

(i) Roughage: These are rich in fibre; e.g., cowpea, berseem, etc.

(ii) Concentrates: These are nutrient-rich and low on fibres; e.g., oats, maize, etc.

Q. 10. What is a GM crop? Name any one such crop which is grown in India.

Ans. Crop which has been developed by introducing a new gene from a different source, to obtain the desired character, is called genetically modified (GM) crop. For example, Bt cotton which is made insect-resistant by introducing a new gene from a bacteria.

Q. 11. Why is organic matter important for crop production?

Ans. Organic matter is important for crop production because:

(a) It helps in improving soil structure.

(b) It helps in increasing water holding capacity of sandy soil.

(c) In clayey soil, large quantities of organic matter helps in drainage and in avoiding waterlogging.

Q. 12. Write the modes by which insects affect the crop yield.

Ans. Insects have a damaging effect on the crop yield. Some insects cut the plant parts inhibiting their growth while others suck the cell sap so bees cannot help in pollination. Some insects are even seen as the bore which damage the entire crop yield.

Q. 13. Why is excess use of fertilisers detrimental for the environment?

Ans. Fertilisers are inorganic chemicals which are not easily degraded. Excess use of fertilisers causes environmental pollution as their residual and unused amounts will become pollutants for air, water and soil.

Q. 14. Differentiate between compost and vermicompost.

Ans. Compost: It is prepared by the process in which farm waste materials like livestock
excreta, vegetable wastes, animal refuse, domestic waste, straw, eradicated weeds are decomposed and used as manure.

Vermicompost: It is the compost prepared from organic matter using earthworms which hasten the process of decomposition.

Q. 15. An Italian bee variety *A. mellifera* has been introduced in India for honey production. write about its merits over other varieties.

Ans. Merits of Italian bee variety *A. mellifera* are:

(a) It stings less.

(b) It has high honey collection capacity.

(c) It stays in the given beehive for longer periods and breeds very well.

Short Answer Type Questions – II

[3 marks]

Q. 1. What mineral nutrients are supplied to the plants by air, water and soil?

Ans. Air supplies two nutrients to plants namely carbon and oxygen. Water supplies hydrogen and soil supplies thirteen nutrient elements to the plants. Among these thirteen nutrients, six are macronutrients and the other seven nutrients are micronutrients. Macronutrients are nitrogen, phosphorus, potassium, calcium, magnesium and sulphur while the micronutrients are iron, manganese, boron, zinc, copper, molybdenum and chlorine.

Q. 2. Why should pesticides be used judiciously?

Ans. Pesticides are the chemicals that are used to control weeds, insects, rodents, fungi as well as diseases of plants. Their excessive use causes environmental pollution. They reach the water resources and affect the aquatic flora and fauna. These harmful chemicals reach the bodies of birds, animals and human beings through various food chains and are thus, harmful to all depending on their concentration in the body.

Q. 3. What do you understand by organic farming?

Ans. Organic farming is a farming system in which there is minimal or no use of chemicals such as fertilisers, herbicides, pesticides, etc. There is maximum input of organic manure, recycled farm wastes, i.e., straw and livestock excreta, use of bio-agents such as culture of blue green algae in preparation of biofertilisers. Also, neem leaves or turmeric is used specifically in grain storage which act as biopesticides. It employs healthy cropping systems (mixed cropping, intercropping and crop rotation).

Q. 4. List out some useful traits in improved crop?

Ans. Some useful traits in improved crops are:

(i) Higher yield of crop (ii) Improved quality of crop

(iii) Biotic and abiotic resistance (iv) Change in maturity duration

(v) Wider adaptability and (vi) Desiratble agronomic characteristics.

Q. 5. What are pathogens? Name any two plant diseases caused by pathogens.

Ans. The disease-causing microorganisms like bacteria, fungi and viruses are called pathogens. They reach the plants through water, air, soil as well as seeds.
Two plant diseases caused by pathogens are rust in wheat and blast in paddy/stem rot in pigeon pea.

Q. 6. What are the types of food requirements of dairy animals? Why do external and internal parasites live on and in the cattle can be fatal?

Ans. They are two types of food requirements of diary animals:

(i) Maintenance requirement, which is the food required to support the animal to live a health life.

(ii) Milk producing requirement, which is the food required during the lactation period. The external parasites live on skin and mainly cause skin diseases. The internal parasites like worms, affect stomach and intestine while flukes damage liver.

Q. 7. Write the names and the average yield of the three important breeds of buffaloes of our country with high yield of milk.

Ans. (a) Murrah: It is the original breed of Haryana and Punjab. The average yield of milk is 1800-2560 litres during lactation period.

(b) Mehsana: This breed belongs to Gujarat, specially Mehsana and Vadodara districts. Average yield is about 1200-2500 litres during lactation period.

(c) Surti: These are natives of Kaira and Vadodara districts of Gujarat. The milk production during lactation period is about 1600-1800 litres.

Q. 8. Which factors should be taken into consideration for fish culture?

Ans. The three important factors to be considered for fish culture are:

(a) Topography, i. e., location of pond.

(b) Water resources and their quality.

(c) Soil quality.

Q. 9. What do you understand by humane farming?

Ans. It means providing proper and clean shelter facilities to cattle for their health as well as for the production of clean milk. The animals are brushed to remove dirt and loose hair. They should be sheltered in well-ventilated sheds with roofs so that they are protected from rain, heat and cold. Also, the floor of the cattle shed needs to be sloping so that water logging does not happen and it remains dry.

Q. 10. Name the indigenous fowls of India. Which among them is the most popular?

Ans. Indigenous fowl varieties of India are:

(a) Aseel (b) Ghagus

(c) Chittagong (d) Busra

Of these, Aseel is the most popular, which provides high yield of meat but is a poor egg layer.

Q. 11. What are the important precautions that should be taken in poultry farming?

Ans. In poultry farming the following precautions should be taken:

(a) Proper poultry feed.

(b) Proper vaccination of birds.

(c) Prevention and control of diseases and pests.

(d) Isolation of diseased birds.

(e) Maintenance of optimum temperature and hygienic conditions in housing.

Q. 12. What are poultry diseases and how can they be prevented?
Ans. Poultry fowl suffer from a variety of diseases caused by virus (Dermitis), bacteria (Tuberculosis), fungi (Aspergillosis), like worms, mites as well as from nutritional deficiencies.

These necessitate proper cleaning, sanitation and spraying of disinfect at regular intervals.

Appropriate vaccination can also prevent the occurrence of infectious diseases and reduce the loss of poultry during an outbreak of a disease.'

Q. 13. why is animal husbandry essential?

Ans. Animal husbandry is essential because of the following reasons:

(a) To increase milk production. It also increases the production of various milk products like butter and cheese.

(b) To increase egg and meat production which are highly nutritious.

(c) To increase fish production.

(d) For the proper utilisation of animal wastes.

Q. 14. What are the advantages of beekeeping?

Ans. Following are the main advantages of beekeeping:

(a) Along with getting honey on a commercial scale, other products like wax, royal jelly and bee venom are also obtained from beekeeping.

(b) Beekeeping requires low investments due to which farmers, along with agricuture also do beekeeping to generate additional income.

(c) It also helps in cross-pollination as pollens are transferred from one flower to another by the bees while collecting nectar.

Q. 15. Name two infectious diseases each of cows, poultry and fishes.

Ans. (a) Cows - Anthrax and Foot and mouth disease

(b) Poultry - Ranikhet and Salmonellosis

(c) Fishes- Viral Hemorrhagic Septicemia (VHS) and Infectious Pancreatic Necrosis (IPN)

Q. 16. How is fish meat advantageous than meat of other animals?

Ans. Fish meat is considered advantageous than the meat of other animals because:

(a) It is rich in proteins (13-20 per cent) and has less fats.

(b) It is a rich source of vitamin A and D.

(c) It is rich in iodine that is essential for thyroxine formation.

(d) It is more easily digestible than the meat of other animals.

Q. 17. What are the main elements of animal husbandry?

Ans. The main elements of animal husbandry are:

(a) Proper feeding of animals.

(b) Providing freshwater to animals.

(c) Providing safe and hygienic shelter to animals.

(d) Ensuring proper health of animals and protection against diseases.

(e) Proper breeding of animals.

Q. 18. Enumerate the advantages of mixed farming.

Ans. Following are the main advantages of mixed farming:

(a) Farmyard manure is made available from livestock which is used a again in agricultural farms.

(b) Organic waste materials like straw, husks and chaffs of grains, household kitchen waste, etc., are converted into human food through the agency of cattle, sheep, poultry, pigs, etc., as per the choice of farmer.

(c) It provides work to all the members of a family throughout the year, thus providing subsidiary occupation without the need of employing special labour.

(d) Adopting exact combination in mixed farming, income can be increased, e.g., the number of animals can be increased (as per the food/crop available) to enhance milk production.

Q. 19. Give the merits and demerits of fish culture.

Ans. Demerits: (i) Threat to biodiversity, (ii) only economically important and valued fishes will be cultured.

'**Merits:** (i) Large amount of desired fishes can be obtained in small area, (ii) lncreased quality of food as fishes are cheaper source of protein.

Q. 20. Discuss why pesticides are used in very accurate concentration and in very appropriate manner.

Ans. Pesticides are used in very accurate concentration and in a very appropriate manner because if used in excess it

(a) harms the soil and causes loss of fertility,

(b) checks the replenishment of organic matter,

(c) kills the microorganism of soil,

(d) causes air, water and soil pollution.

Q. 21. (a) Give any three preventive measures for pest control.

(b) What preventive and control measures are used before grains are stored for future use?

Ans. (a) The three important preventive measures for pest control are:

(i) Employing crop rotation.

(ii) Use of pest-resistant varieties.

(iii) Employing optimum time of sowing the crops.

(b) Preventive and control measures are used before grains are stored for future use, which include strict cleaning of the produce before storage, proper drying of the produce first in sunlight and then in shade, and fumigations by using chemicals that kill pests.

Long Answer Type Questions

[5 marks]

Q. 1. Why is crop variety improvement important in cultivation? Describe the important factors for which variety improvement is done.

Ans. As we know, weather conditions, soil quality and availability of water are the main factors on which crop yield depends. As weather conditions like drought and flood situation are unpredictable, it is important to have varieties that can grow in adverse climatic conditions. In the same way, varieties that are tolerant to high soil salinity have also been developed. Some of the factors for which crop variety improvement is done are as follows:

(a) High Yield: To increase the productivity of the crop per acre.

(b) Improve Quality: Quality considerations of crop products vary from crop to crop. For instance, baking quality is important in wheat, protein quality in pulses oil quality in oilseeds and preserving quality in fruits and vegetables.

(c) Biotic and Abiotic Resistance: Crop production can fall due to biotic and abiotic stresses under different situations. Thus, varieties resistant to these stresses can improve crop improve crop production.

(d) Change in Maturity Duration: The shorter the duration of the crop from sowing to harvesting, more economical is the variety. It reduces the cost of crop production and allows the farmers to grow multiple crops in a year.

(e) Wider Adaptability: Developing varieties for wider adaptability helps in stabilising the crop production under different environmental conditions. Also, one variety can then be grown under different climatic conditions in different areas.

(f) Desirable Agronomic Characteristics: Height and profuse branching are desirable characteristics for fodder crops. Dwarfness is desired in cereals such that fewer nutrients are consumed by these crops. Thus, developing varieties of desired agronomic characters also help in higher yield.

Q. 2. Describe the main irrigation systems that are adopted in India.

Ans. Different kinds of irrigation systems are adopted to supply water to agricultural lands depending on the kinds of water resources available. These include wells, canals, rivers and tanks.

(a) Wells: They are of two types-dug wells and tube wells. In dug wells, water is collected from water bearing strata while in tube wells water is tapped from the deeper strata. From these wells, water is lifted by pumps for irrigation.
(b) Canals: Canal system is usually an elaborate and extensive irrigation system.

Canals receive water from one or more reservoirs or from rivers. The main canal is divided into branch canals having further distributaries to irrigate fields.

(c) River lift systems: In this system, water is directly drawn from the rivers for supplementing irrigation in areas lying lose to rivers. This system is used in areas where canal flow is insufficient or irregular due to inadequate reservoir release.

(d) Tanks: Tanks are small storage reservoirs, which intercept and store the run-off of smaller catchment areas.

Apart from the above systems, some new initiatives have been undertaken for increasing the water available for agriculture. These include rainwater harvesting system and watershed management system. This involves building small check-dams which lead to an increase in groundwater levels. These check-dams stop the rainwater from flowing away and also reduce soil erosion.

Q. 3. Enlist the criteria for the selection of crops for mixed cropping.

Ans. Mixed cropping is employed to minimise risk and as an insurance against crop failure due to abnormal weather conditions. The main criteria's for selection of the crops for mixed cropping are as follows:

(a) Duration of Crops: One of the crops should be a long duration and other should be a short duration crop.

(b) Growth Habit: One of the crops should be growing tall and the other should be growing short. The component crops should have different canopy (i.e., the structure of leaves, stem and flowers found above the ground).

(c) Nutrient Demand: One of the component crops should require lesser nutrients than the other crop.

(d) Root Pattern: One of the crop should be deep-rooted while the other should be shallow-rooted.

(e) Water Requirement: One of the component crops should require lesser water than the other.

Q. 4. What are weeds? Enlist the methods employed to control weeds.

Or

Discuss various methods for weed control.

Ans. The unwanted plants in a cultivated field are called weeds. They compete for food, space and light with the main crop plants. They germinate and grow faster, and thus effect the quality and yield of the crop. For these reasons, weed plants need to be removed from the cultivated field in early stage of crop. The methods employed for weed control are as follows:

(a) Mechanical Method: The weed plants are removed from the field either manually or with the help of agricultural implements like uprooting or hand hoeing or weeding with khurpi, ploughing, etc.

(b) Cultural Method: This method includes:

(i) Proper seed bed preparation

(ii) Timely sowing of crops

(iii) Intercropping

(iv) Crop rotation

(c) Chemical Methods: By spraying chemicals that do not harm crop plants but destroy only the weed plants, the latter can be controlled. These chemicals are called weedicides, e.g., 2, 4-D and atrazine.

(d) Biological Method: As we know, some insects feed an particular weeds. Thus, we use these insects as biological weed-controlling agents like the use of cochineal insect to control opuntia weed and the use of the grass carp fish to control aquatic weeds.

Q. 5. Why are improved poultry breeds developed? Describe the desirable traits for which new varieties are developed.

Ans. Poultry farming is undertaken to raise domestic fowl for egg production and chicken meat. For this, improved poultry breeds are developed and farmed to produce layers for eggs and broilers for meat. The cross-breeding programmes between Indian (indigenous like Aseel) and foreign (exotic like Leghorn) breeds for variety improvement are focused on developing new varieties for the following desirable traits:

(a) The number and quality of chicks.

(b) Dwarf broiler parent for commercial chick production.

(c) Tolerance to high temperature.

(d) Low maintenance requirements.

(e) Reduction in the size of the egg-laying bird possessing the ability to utilise more fibrous and economical diet that are formulated using agricultural by-products.

Q. 6. Describe composite fish culture system. What is the major problem in fish farming? How is it overcome?

Ans. By adopting composite fish culture systems, intensive fish farming can be done. Both local and imported fish species are used in such systems. In such a system, a combination of five or six fish species is used in a single fish pond. These species are selected in such a way that they have different types of food habits and don't compete

for food among themselves. As a result, the food available in all the parts of the pond is used.

For example:

Catlas are surface feeders, Rohus feed in the middle-zone of the pond, Mrigals and Common Carps are bottom feeders, and Grass Carps feed on the weeds. Together these species can use all the food in the pond without competing with each other. This naturally increases the fish yield from the pond.

One problem with such a composite fish culture is that many of these fishes breed only during monsoon. Even if fish seed is collected from the wild, it can be mixed with that of other species as well. So a major problem in fish farming is the lack of availability of good quality seed. To overcome this problem, now some ways have been worked out to breed these fish in ponds using hormonal stimulation. This has ensured the supply of pure fish seed in desired quantities.

Q. 7. Differentiate between fertilisers and manures.

Ans. Differences between fertilisers and manures:

Fertilisers	Manures
1. They are inorganic substances which are manufactured in factories.	**1.** Manure is an organic substance that is obtained from decomposition of vegetable and animal waste.
2. Microbes are not needed for their formation.	**2.** Microbes degrade the organic substances to form manure.
3. Easy to transport, store and apply to crops.	**3.** It is difficult to transport, store and apply manure to crops.
4. They do not restore soil texture.	**4.** They restore soil texture.
5. They do not help in retention of water.	**5.** They help in the retention of water.

Q.8. How is intercropping different from mixed cropping?

Ans.

Mixed cropping	Intercropping
1. There is no definite pattern of rows.	1. Crops are grown in definite pattern of rows like 1: 1, 1: 2 or 1: 3.
2. It is undertaken to reduce the chances of crop failure.	2. It is undertaken to enhance the production of crops per unit area.
3. Mixed cropping cannot be done separately for crops.	3. In intercropping crops can be harvested as well as threshed separately.
4. Seeds are mixed up before sowing.	4. Seeds are not mixed before sowing.
5. Application of fertilisers and spraying of pesticides for separate crops is not possible.	5. As per the need of the individual crop, fertilisers as well as pesticides can be applied easily.

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.

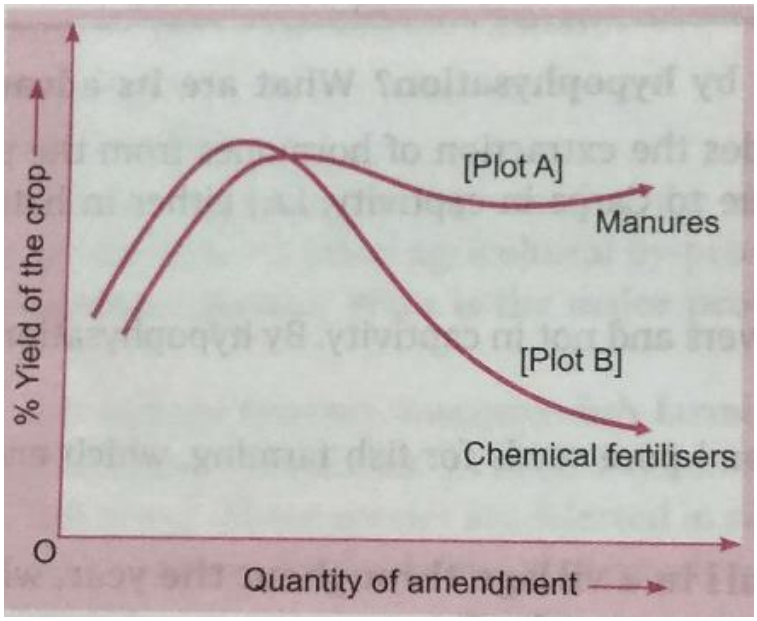
Q. 6. Figure shows the two crop fields [plots A and B] have been treated by manures and Chemical fertilisers respectively, keeping other environmental factors same.

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.