Assignments in Science Class IX (Term I)

15 Improvement in Food Resources

IMPORTANT NOTES

1. **Agriculture** is the science of growing plants and raising animals useful to man.
2. Science of growing vegetables, fruits and ornamental plants is called **horticulture.**
3. The plants grown and tended or cared for in a field are known as **crop plants or crops.**
4. There are two main seasons for cultivating crops in India. These are **winter season and summer season crops.**

   The crops grown is winter season are called **Rabi** crops and the crops grown is summer season are called **Kharif** crops.
5. Wheat, barley, gram, pea, potato and mustard are rabi season crops while rice, maize, groundnut, soyabean, arhar, urad, moong, jowar, and cotton are kharif season crops.
6. Nutrients which are required in relatively large quantity are called **macronutrients** while those required in small quantity are called **micronutrients.**
7. The major sources of nutrients in the field are **manures** and **fertilisers.**
8. **Vermicomposting** is composting with the help of earthworms.
9. Accumulation of wastes and organic matter in the water body leads to excessive growth of phytoplankton and this in turn results into the depletion of free oxygen content in that water body. This phenomenon is called *eutrophication.*
10. **Biofertilisers** are micro-organisms or biologically active products which are used to enrich soil fertility. Generally *Rhizobium, Anabaena* which are found in symbiotic association with plants like Legumes, *Azolla,* etc. are used as biofertilisers.
11. **Farming** is a process of producing plants and animal products in a farm.
12. **Organic farming** is a farming system in which fertilisers, herbicides or pesticides are replaced by manures, recycled farm wastes, and biofertilisers.
13. **Mixed farming** is defined as the system of farming in which crop production is combined with the rearing of livestock.
14. **Mixed cropping** is the practice of growing two or more crops simultaneously in the same field.
15. Growing more than two crops in succession in a field during one year is called **multiple cropping.**
16. The basic objective of mixed cropping is to achieve insurance against total crop failure under poor rainfall conditions.
17. **Intercropping** is the practice of growing two or more crops simultaneously in the same field in rows.
18. The practice of growing different crops in the same field alternately, in succession, is called **crop rotation.**
19. Unwanted plants growing in a field are called **weeds,** and the process of removing weeds from a field is called **weeding.**
20. The method of controlling living organisms by the use of other organisms is called **biological control.**

ASSIGNMENTS FOR SUMMATIVE ASSESSMENT

I. VERY SHORT ANSWER QUESTIONS (1 Mark)

PREVIOUS YEARS' QUESTIONS

1. State one demerit with composite fish culture system. **[2010 (T-I)]**
2. State one importance of photoperiod in agriculture. **[2010 (T-I)]**
3. Name one micronutrient and one macronutrient which plants take from the soil. **[2010 (T-I)]**
4. List two desirable traits for fodder crops. **[2010 (T-I)]**

5. Distinguish between a mullet and a prawn. **[2010 (T-I)]**

6. Name two breeds of cows selected for long lactation period. **[2010 (T-I)]**

7. How does Bombay duck differ from common carp ? **[2010 (T-I)]**

8. How does catla differ from mrigal? **[2010 (T-I)]**

9. Name the two vitamins which are added in the poultry feed. **[2010 (T-I)]**

10. From where do plants acquire the following nutrients? **[2010 (T-I)]**

    (a) Nitrogen

    (b) Hydrogen

11. State the reason of introducing Italian bee variety in bee farms. **[2010 (T-I)]**

12. Mention any two activities for the improvement of crop yield. **[2010 (T-I)]**

13. Which nutrients are supplied by cereals and pulses ? **[2010 (T-I)]**

14. Name two fresh initiatives taken to increase the water availability for agriculture. **[2010 (T-I)]**

15. Mention any two advantages of using Italian bee variety in honey production. **[2010 (T-I)]**

16. Name any two weeds of crop field. **[2010 (T-I)]**

17. Define animal husbandry. **[2010 (T-I)]**

18. What are genetically modified crop? **[2010 (T-I)]**

19. Mention the components of food present in vegetable and fruits. **[2010 (T-I)]**

20. Name the cereals which provide us carbohydrate for energy requirement. **[2010 (T-I)]**

21. Give technical term for milk producing females and farm labour animals. **[2010 (T-I)]**

22. Why do we eat pea and groundnut? **[2010 (T-I)]**

OTHER IMPORTANT QUESTIONS

1. Name two types of animal feed.
2. Give the full form of FYM.
3. Name two main factors responsible for loss during storage of grain.
4. How much damage to crops can be caused by insects, pests and diseases?
5. Name four macro nutients important for plants.
6. What is green revolution?
7. What was the aim of white revolution?
8. Name a marine fish.
9. Name the technique of culturing marine fish.
10. Which vitamins are found high in broilers?
11. Which Indian scientist is considered as the father of green revolution?
12. Name a fibres yielding crop.
13. Name four types of irrigation systems adopted in our country.
14. Name the members of a honey-bee family.
15. Give two hazards of using fertilizers.
16. Mention two examples of mixed cropping.
17. Name two factors responsible for losses of grains during storage?
18. Name an exotic variety of honey bee grown in India.
19. What is called the rearing of fish on a large scale?

II. SHORT ANSWER QUESTIONS – I (2 Marks)

PREVIOUS YEARS' QUESTIONS

1. List any two methods adopted in farming for the health of the cattle. **[2010 (T-I)]**

2. List the two types of food requirements of dairy animals. **[2010 (T-I)]**

3. What are rabi crops? State any two examples. **[2010 (T-I)]**

4. List two demerits of the continuous use of fertilizers. **[2010 (T-I)]**

5. List any two advantages of crop rotation. **[2010 (T-I)]**

6. List two characteristics each of roughage and concentrate in relation to animal feed. **[2010 (T-I)]**

7. Mention the two types of food requirements of dairy animals. **[2010 (T-I)]**

8. "Removal of weeds from cultivated fields during the early stages of growth of crops is essential for a good harvest". Justify the statement. **[2010 (T-I)]**

9. Farmers use bee-keeping as an additional income generating activity. Give two reasons. **[2010 (T-I)]**

10. (a) Name any one bottom feeder that can be grown in composite fish culture. **[2010 (T-I)]**

(b) What are the problems faced in such a culture ? How are they overcome?

11. The shorter the duration of the crop the more economical is the variety. Justify this statement. **[2010 (T-I)]**

12. What are the long term benefits of using manure in crop production? **[2010 (T-I)]**

13. What is the major problem is fish farming? How is this problem overcome? **[2010 (T-I)]**

14. How can insect/pests in crop plants and stored grains be controlled? **[2010 (T-I)]**

15. What is meant by the term 'green manure'? State its role in agriculture. **[2010 (T-I)]**

16. How is green manuring done? How is it useful for the soil? **[2010 (T-I)]**

17. What is pasturage and has how is it related to honey production? **[2010 (T-I)]**

18. What are Rabi and Kharif crops? Give two examples each. **[2010 (T-I)]**

19. Name two biotic and two abiotic factors that affects crop production. **[2010 (T-I)]**

20. What is meant by organic farming? **[2010 (T-I)]**

21. Compare the use of manure and fertilizers in maintaining soil fertility. **[2010 (T-I)]**

22. What is meant by sustainable agriculture? **[2010 (T-I)]**

23. What are macronutrients and why are they named so? Give examples also. **[2010 (T-I)]**

24. Which component of food is present in pulses ? Also mention its function in the body. **[2010 (T-I)]**

OTHER IMPORTANT QUESTIONS

1. Define-green manure and vermicompost.

2. Differentiate between bee keeping and poultry farming.

3. Give two merits and two demerits of fish culture.

4. Suggest two preventive measures for the diseases of poultry birds.

5. List out four useful traits in improved crop?

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

7. Define the term photoperiod.

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

9. What type of crops are generally raised in green fields?

10. Write four points on human dependence on plants and animals for food.

III. SHORT ANSWER QUESTIONS – II (3 Marks)

PREVIOUS YEARS' QUESTIONS

1. Distinguish between intercropping and mixed cropping. List any two advantages of intercropping over mixed cropping. **[2010 (T-I)]**

2. State three management practices that are common in dairy and poultry farming. **[2010 (T-I)]**

3. List any three desirable characters of bee varieties suitable for honey production? **[2010 (T-I)]**

4. List any three ways by which the insect/pests attack the plants. **[2010 (T-I)]**

5. List any three desirable characters of bee varieties suitable for honey production? **[2010 (T-I)]**

6. List any six factors for which variety improvement in crops is done. **[2010 (T-I)]**

7. (a) What is composite fish culture system?

(b) Mention one merit and one demerit of this system. **[2010 (T-I)]**

8. (a) Why would a cattle breeder choose to cross breed a Jersy cow with a Red Sindhi? State two reasons.

(b) Why should weeds be constantly removed from cultivated fields? **[2010 (T-I)]**

9. Write four methods of weed control. **[2010 (T-I)]**

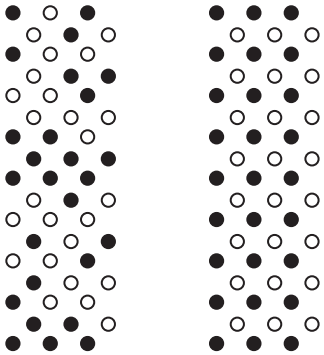
10. Name any three methods of irrigation and briefly describe them. **[2010 (T-I)]**

11. What is animal husbandry? Differentiate between milch and draught animals. What do the following supply to dairy animals : **[2010 (T-I)]**

(a) roughage (ii) concentrates.

12. (a) The black and white dots in the picture below are an indication of two different types of crop plants, identify the cropping pattern shown in figure 'A' and 'B'.

A B



(b) Mention any two advantages of such cropping patterns. **[2010 (T-I)]**

13. List the nutrients supplied by air, water and soil to the plants. **[2010 (T-I)]**

14. Define manures. What are its three different kinds ? State two limitations of manures. **[2010 (T-I)]**

15. What is meant by bee-keeping? Name :

(a) the variety commonly used for commercial honey production.

(b) the variety having high honey collection capacity. State how is pasturage related to honey production. **[2010 (T-I)]**

16. Classify the following as osmosis or diffusion.

(a) Aquatic animals using oxygen dissolved in water during respiration.

(b) Swelling up of raisins on keeping in water.

(c) Spreading of virus on sneezing. **[2010 (T-I)]**

17. Write any three advantages of mixed cropping. **[2010 (T-I)]**

18. (a) What are the management practices required to be taken in a livestock form to ensure healthy and productive livestock population.

(b) Name any two vitamins present in milk. **[2010 (T-I)]**

19. A farmer observed parthenium plant growing along with wheat crop. What is parthenium ? What should he do to protect his crop? Why? **[2010 (T-I)]**

20. A farmer cultivated soyabeans in the field of maize in well planned rows. Name the method of cultivation. Explain the method. What are the advantages of this agricultural practice? **[2010 (T-I)]**

21. (a) What suggestions can you give to an agriculturalist to combine fish culture in his crop field?

(b) What is mariculture? What can be grown by this practice? **[2010 (T-I)]**

22. A farmer wants to store his agricultural produce. What are the factors should he check before storing ? What are the control measures should he take? **[2010 (T-I)]**

23. Broiler production is indeed a solution to increase the production of nutritions, animal protein food. Enumerate the factors that needs to be considered for broiler production? **[2010 (T-I)]**

24. (a) What are pesticides?

(b) Why excessive use of pesticides not advisable?

(c) Name two preventive measures against pests. **[2010 (T-I)]**

25. How is green manure prepared? When is it added to the crop plant? What is the advantage of this type of manure? **[2010 (T-I)]**

26. List six facilities that must be provided to cattle to ensure their good health and production of clean milk? **[2010 (T-I)]**

27. What is manure? How is it prepared? State its role in changing the quality of soil of a field having excess of : **[2010 (T-I)]**

(a) Sand (b) Clay

28. Define hybridization. List its any two advantages. **[2010 (T-I)]**

29. Describe in brief about the various factors responsible for the damage and spoilage of stored food grains. **[2010 (T-I)]**

30. Explain the ways in which the insect pests attack the plants. **[2010 (T-I)]**

31. Explain two ways of improving the crops. **[2010 (T-I)]**

32. Explain the meaning of the following desirable factors for which crop variety improvement is done.

(a) Biotic and abiotic resistance

(b) Wider adaptability

(c) Desirable agronomic traits **[2010 (T-I)]**

33. What is mixed cropping? Give one example. How it helps the farmer? **[2010 (T-I)]**

34. Explain any three factors for which crop variety improvement is done. **[2010 (T-I)]**

35. (a) State two characteristics of a healthy animal.

(b) State any four characteristics of storage structure for grains. **[2010 (T-I)]**

36. Define (a) Green revolution (b) White revolution (c) Hybridisation of crops. **[2010 (T-I)]**

37. List any three factors for which variety improvement for crops is done. Explain any one in detail. **[2010 (T-I)]**

38. Define irrigation. Briefly explain any two common irrigation systems. **[2010 (T-I)]**

39. Give three main points of difference between layers and broilers. **[2010 (T-I)]**

40. What is meant by hybridisation? Mention its two types. **[2010 (T-I)]**

41. State three factors on which production of good quality milk depends. **[2010 (T-I)]**

42. What are the six aims and objectives of plant breeding? **[2010 (T-I)]**

43. Explain any two patterns of growing crops. **[2010 (T-I)]**

44. A farmer grows a leguminous crop between two cereal crops. What kind of advantage he gets by such crop rotation? **[2010 (T-I)]**

45. What factors may be responsible for losses of grains during storage? Also mention any two preventive measure to control loss of grains during storage. **[2010 (T-I)]**

46. Explain that livestock production needs to be improved. Why there is necessity of animal husbandry? **[2010 (T-I)]**

47. Mention any two uses of manure. What is vermicompost? **[2010 (T-I)]**

48. What are the types of food requirements of dairy animals? Why external and internal parasites live on and in the cattle can be fatal. **[2010 (T-I)]**

49. Give three management practices which are common in dairy and poultry farming? **[2010 (T-I)]**

50. What are the three advantages of composite fish culture? **[2010 (T-I)]**

51. (a) List three factors on which cultivation practices and crop yield are related.

(b) Name three stages involved in farming practices. **[2010 (T-I)]**

52. State three advantages of shorter duration of the crop from sowing to harvesting. **[2010 (T-I)]**

OTHER IMPORTANT QUESTIONS

1. Discuss the role of hybridisation in crop improvement.

2. Write the modes by which insects affect the crop yield.

3. Why is excess use of fertilizers detrimental for environment?

4. Why is organic matter important for crop production?

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

6. Why bee keping should be done in good pasturage?

7. Differentiate between capture fishing, aquaculture and mariculture.

8. Discuss three kinds of irrigation systems adopted in India.

IV. LONG ANSWER QUESTIONS (5 Marks)

PREVIOUS YEARS' QUESTIONS

1. (a) What are weeds? Give an example.

(b) Why should weeds be removed from cultivated fields.

(c) List five preventive methods that help in weed control. **[2010 (T-I)]**

2. (a) Give three reasons in which insect pests attack plants which affect the health and crop yield.

(b) Which two preventive measures are used before grains are stored for future use? **[2010 (T-I)]**

3. (a) What is inter cropping?

(b) How does intercropping give better returns to the farmers than the normal method of cultivation ?

(c) State four effects of biotic and abiotic factors during storage of grains. **[2010 (T-I)]**

4. (a) Give the two types of food requirements of dairy animals.

(b) Mention two forms of animal feed.

(c) What is the role of certain feed additives containing micro nutrients in dairy animals ?

[2010 (T-I)]

OTHER IMPORTANT QUESTIONS

1. Cultivation practices and crop yield are related to environmental conditions. Explain.

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

3. What is organic farming? Write about its advantages.

4. What is plant breeding? Write about one technique of plant breeding.

5. What is an egg layer and a broiler? What are the differences between the two?

ASSIGNMENTS FOR FORMATIVE ASSESSMENT

A. Activity

To collect and study symptoms of diseases in locally available crop plant.

Materials Required

Two or three diseased crop plants, compound microscope, permanent slide of some diseased plants, a hand lens, slides, cover slips, needle and a brush.

Procedure

- Carefully observe three different kinds of diseased plants one by one.
- Observe the visible disease symptoms such as decolouration, infection, spots, coloured patches, soft or decaying parts, etc. on different parts.
- Record the observations in observation table.
- Scrape the infected patches or spots with the help of a needle. Transfer the scrapping onto a drop of water on a slide. Place a coverslip and observe under the low power of microscope.
- Observe the presence of spores or hyphae alongwith damaged plant cells.
- You can also draw a diagram of the infected part showing the disease symptoms.

Observation

Sl. No.	Observation	Plant 1	Plant 2	Plant 3
1.	Infected part is :	(Yes/No)	(Yes/No)	(Yes/No)
	Stem			
	Root			
	Leaf			
	Flower			
	Fruit			
2.	Extent of infection :			
	Localised			
	Entire Plant			
3.	Infection spot			
	Soft patch			
	Dry patch			
4.	Are spores visible?			
5.	Are hyphae visible?			

Conclusion

Rust of wheat

Late Blight of Potato

Rust of Sugarcane

B. Group Activities

1. Visit a weed-infested field in the month of July or August and make a list of the weeds and insects in the field.

S.N.	Name of weeds	Name of insects
1.	___	___
2.	___	___
3.	___	___
4.	___	___

2. Visit a livestock farm. Note the

(i) number of cattle and number of different breeds.

(ii) amount of daily milk production from the different breeds.

3. The teacher can divide the class into different groups of 5-6 students. Ask each group to perform this activity.

(i) Collect kitchen waste materials, decaying fruits and vegetables, fallen leaves and put them in a small pit dug in a corner of a garden or some open space.

(ii) Cover the pit with some soil and leave it as such for about two months.

(iii) Observe the contents of the pit after two months.

You will observe that the waste materials put inside the pit have been converted into a dark coloured organic manure called compost.

4. Ask the students to visit a field. They can note the following in their field book.

(i) Locality and date of visit

(ii) The crop grown in the field

(iii) The weeds (plants other than the crop plants) growing in the field.

They can take the help of the farmer to write down the local names of the weeds growing in the field.

Bring these weeds to home and fix these in the scrap book after drying.

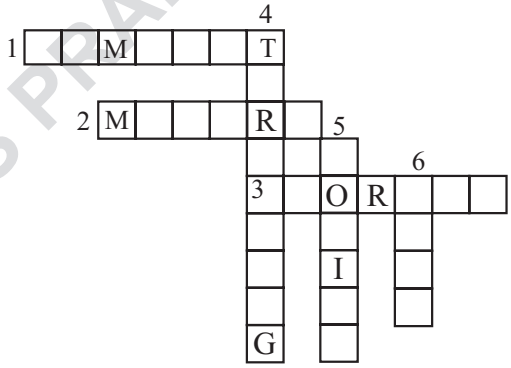
C. Puzzle

Across

1. It is prepared from rotten vegetable matter and animal refuse.

2. A major source of nutrients in fields and an organic substance.

3. The cereal grains are dried before___.



Down

4. Removal of the grains from the chaff.

5. The process of putting the seeds in the soil.

6. The winter season crops like wheat, barley, gram, pea. etc are called.

D. Quiz

Unjumble the given words.

(a) IGTRAIROIN

(b) OTPMOSC

(c) DRRMAYAF

(d) COIGNRA

(e) TORUYPL

(f) AHKIFR

E. Seminar

1. Manures and fertilizers are the major sources of nutrients in the fields.

Hints : Discuss the following points

(i) Role of manures

(ii) Types of manures

(iii) Hazards of using fertilizers

(iv) Effects of fertilizers on soil quality.

2. Organic Farming

(**Hinst :** Discuss the following points

(i) Biofertilizers are used in place of chemical fertilizers

(ii) Use of biopesticides

(iii) Organic farming and natural ecosystem

(iv) Soil fertility

(v) Pollution of air, water and soil.)

3. Cattle farming

(Hints : Discuss the following points

(i) High milk yielding breeds

(ii) Shelter and feeding

(iii) Developing the better suited and high yielding breeds.)

F. Debate

1. Are manures not nutrient specific?

2. Does continuous use of fertilizers lead to a loss of organic matter?

3. Do poultry birds offer advantages then the larger livestock?

G. Group Discussion

a. Mixed-cropping

b. Biological methods of weed control

c. Bee keeping

d. Diseases and control of poultry birds.

H. Project

To observe the fish culture in combination with a rice crop.

(4-5 students can participate)

Visit a rice-crop fields in near by area where fish are grown in the water in paddy field. The students can observe and try to find out the answers of the following questions

(i) Does rice crop help in retaining the habitat conditions for fish?

(ii) Whether only local or imported or both species of fish are grown?

(iii) Do the fish harm the rice crop?

(iv) How do the fertilisers affect the growth of fish in such rice-crop fields.

Class IX Chapter 15 – Improvement in Food Resources Science

Question 1:

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

Answer:

(i) Cereals provide us with carbohydrates. Also, they are a rich source of energy.

(ii) Pulses give us proteins.

(iii) Fruits and vegetables are a rich source of vitamins and minerals. A small amount of proteins, carbohydrates, and fats are also present in them.

How do biotic and abiotic factors affect crop production?

Answer:

A variety of biotic factors such as pests, nematodes, diseases, etc. can reduce the net crop production. A pest causes damage to agriculture by feeding on crops. For example, boll weevil is a pest on cotton. It attacks the cotton crop, thereby reducing its yield. Weeds also reduce crop productivity by competing with the main crop for nutrients, light, and space.

Similarly, abiotic factors such as salinity, temperature, etc. affect the net crop production. Some natural calamities such as droughts and floods are unpredictable.

Their occurrence has a great impact on crops sometimes, destroying the entire crop.

Question 2:

What are the desirable agronomic characteristics for crop improvements?

Answer:

The desirable agronomic characteristics for crop improvements are:

(i) Tallness and profuse branching in any fodder crop.

(ii) Dwarfness in cereals.

These desirable agronomic characteristics help in increasing crop productivity.

What are macro-nutrients and why are they called macro-nutrients?

Answer:

Macro-nutrientsare nutrients required in relatively large quantities for growth and development of plants. They are six in number. Since they are required in large quantities, they are known as macro-nutrient. The six macro-nutrients required by plants are nitrogen, phosphorus, potassium, calcium, magnesium, and sulphur.

Question 2:

How do plants get nutrients?

Answer:

Plants require sixteen essential nutrients from nature for their growth and development. All these nutrients are obtained from air, water, and soil. Soil is the major source of nutrients. Thirteen of these nutrients are available from soil. The remaining three nutrients (carbon, oxygen, and hydrogen) are obtained from air and water.

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

Answer:

Manures increase soil fertility by enriching the soil with organic matter and nutrients as it is prepared by the decomposition of animal excreta and plant wastes. On the other hand, fertilizers are mostly inorganic compounds whose excessive use is harmful to the symbiotic micro-organisms living in soil. Their excessive use also reduces soil fertility. Hence, fertilizers are considered good for only short term use.

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.

Answer:

(c)Farmers using good quality seeds, adopting irrigation, using fertilizers, and using crop protection measures will derive most benefits.

(i) The use of good quality seeds increases the total crop production. If a farmer is using good quality seeds, then a majority of the seeds will germinate properly, and will grow into a healthy plant.

(ii) Proper irrigation methods improve the water availability to crops.

(iii) Fertilizers ensure healthy growth and development in plants by providing the essential nutrients such as nitrogen, phosphorus, potassium, etc.

(iv) Crop protection measures include various methods to control weeds, pests, and infectious agents. If all these necessary measures are taken by a farmer, then the overall production of crops will increase.

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

Answer:

Preventive measures and biological control methods should be preferred for protecting crops because excessive use of chemicals leads to environmental problems. These chemicals are also poisonous for plants and animals. Preventive measures include proper soil and seed preparation, timely sowing of seeds, intercropping and mixed cropping, usage of resistant varieties of crops, etc. On the other hand, biological control methods include the usage of bio-pesticides that are less toxic for the environment. An example of bio-pesticides is Bacillus thuringenesis,which is an insect pathogen that kills a wide range of insect larvae. Therefore, both preventive measures and biological control methods are considered eco- friendly methods of crop protection.

Question 2:

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

Answer:

During the storage of grains, various biotic factors such as insects, rodents, mites, fungi, bacteria, etc. and various abiotic factors such as inappropriate moisture, temperature, lack of sunlight, flood, etc. are responsible for losses of grains. These factors act on stored grains and result in degradation, poor germinability, discolouration, etc.

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

Answer:

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

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."
Answer:

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

What management practices are common in dairy and poultry farming?

Answer:

Common management practices in dairy and poultry farming are:

(i) Proper shelter facilities and their regular cleaning.

(ii) Some basic hygienic conditions such as clean water, nutritious food, etc.

(iii) Animals are kept in spacious, airy, and ventilated place.

(iv) Prevention and cure of diseases at the right time is ensured.

Question 2:

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

Answer:

Layersare meant for egg production, whereas broilers are meant for poultry meat. Nutritional, environmental, and housing conditions required by broilers are different from those required by egg layers. A broiler chicken, for their proper growth, requires vitamin rich supplements especially vitamin A and K. Also, their diet includes protein

rich food and enough fat. They also require extra care and maintenance to increase their survival rate in comparison to egg layers.

How are fish obtained?

Answer:

Fish can be obtained by two ways:

(i) Capture fishing: It is the process of obtaining fish from natural resources.

(ii) Culture fishery: It is the practice of farming fishes. Farming can be done in both freshwater ecosystem (which includes river water, pond water) and marine ecosystem.

Question 2:

What are the advantages of composite fish culture?

Answer:

An advantage of composite fish culture is that it increases the yield of fish. In a composite fish culture, five or six different species are grown together in a single fish pond. Fishes with different food habitats are chosen so that they do not compete for

food among themselves. Also, this ensures a complete utilization of food resources in the pond. As a result, the survival rate of fish increases and their yield also increases.

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

Answer:

Bee varieties having the following desirable characters are suitable for honey production:

(i) They should yield high quantity of honey.

(ii) They should not sting much.

(iii) They should stay in the beehive for long durations.

(iv) They should breed very well.

Question 2:

What is pasturage and how is it related to honey production?

Answer:

Pasturage is the availability of flowers from which bees collect nectar and pollen. It is related to the production of honey as it determines the taste and quantity of honey.

Explain any one method of crop production which ensures high yield.

Answer:

Crop rotationis one of the methods of crop production that ensures high yield. It is the method of growing two or more varieties of crops on the same land in sequential seasons. A crop utilises some particular nutrients in larger quantities from the soil. Then, if the same crop is grown in subsequent seasons those nutrients will get depleted in the soil. Therefore, crops having different nutrient requirements are rotated. For example, legumes which have nitrogen-fixing bacteria in their root nodules supply the soil with nitrogen. Therefore, these legumes are rotated with nitrogen requiring cereals such as wheat and maize. This method reduces the need of fertilizers, thereby increasing the overall yield of crops.

Question 2:

Why are manures and fertilizers used in fields?

Answer:

Manures and fertilizers are used in fields to enrich the soil with the required nutrients. Manure helps in enriching the soil with organic matter and nutrients. This improves the fertility and structure of the soil. On the other hand, fertilizers ensure a healthy growth and development in plants. They are a good source of nitrogen, phosphorus, and potassium. To get an optimum yield, it is instructed to use a balanced combination of manures and fertilizers in the soil.

Question 3:

What are the advantages of inter-cropping and crop rotation?

Answer:

Inter-cropping and crop rotation both play an important role in increasing the yield of crops. Inter-cropping helps in preventing pests and diseases to spread throughout the field. It also increases soil fertility, whereas crop rotation prevents soil depletion, increases soil fertility, and reduces soil erosion. Both these methods reduce the need for fertilizers. It also helps in controlling weeds and controls the growth of pathogens and pests in crops.

Question 4:

What is genetic manipulation? How is it useful in agricultural practices?

Answer:

Genetic manipulationis a process where the gene for a particular character is introduced inside the chromosome of a cell. When the gene for a particular character is introduced in a plant cell, a transgenic plant is produced. These transgenic plants exhibit characters governed by the newly introduced gene.

For example, let us assume there is a wild plant that produces small fruits. If the gene responsible for a larger fruit size is introduced in this plant, this plant becomes transgenic, and starts producing larger fruits. Similarly, genes for higher yield, disease resistance, etc. can be introduced in any desired plant.

Therefore, gene manipulation plays an important role in agricultural practices. It helps in improving crop variety. It ensures food security and insect resistant crops. It also improves the quality and yield of crops.

Question 6:

How do good animal husbandry practices benefit farmers?

Answer:

Cattle farming is one of the methods of animal husbandry that is most beneficial for farmers. Using this method, better breeds of draught animals can be produced. Such draught animals are engaged in agricultural fields for labour work such as carting, irrigation, tilling, etc.

Question 7:

What are the benefits of cattle farming?

Answer:

Benefits of cattle farming:

(i) Good quality and quantity of milk can be produced.

(ii) Draught labour animals can be produced for agricultural work.

(iii) New variety that are resistant to diseases can be produced by crossing two varieties with the desired traits.

Question 8:

For increasing production, what is common in poultry, fisheries and bee-keeping?

Answer:

The common factor for increasing production in poultry, fisheries, and bee keeping is the proper management techniques that are to be followed. Regular cleaning of farms is of utmost importance. Maintenance of temperature and prevention and cure of diseases is also required to increase the number of animals.

Question 9:

How do you differentiate between capture fishing, mariculture and aquaculture?

Answer:

Capture fishing	Mariculture	Aquaculture
It is the method of obtaining fishes from natural resources.	It is the culture of marine fishes for commercial use.	It involves the production of aquatic animals that are of high economic value such as prawns, lobsters, fishes, crabs, etc.