Chapter 15
Improvement in Food resources.

Multiple Choice Questions

1. Which one is an oil yielding plant among the following0?
(a) Lentil
(b) Sunflower
(c) Cauliflower
(d) Hibiscus

Soln:

Answer is (b) Sunflower

Explanation:

Lentisls are pulse yielding tree. Cauliflower is a vegetable and Hibiscus is a flower, whereas Sunflower is used to make oil.
Soln:

2. Which one is not a source of carbohydrate?
(a) Rice
(b) Millets
(c) Sorghum
(d) Gram

Soln:
Answer is (d) Gram

Explanation:

Rice millets and sorghum has carbohydrates in them as a major source of energy. Whereas Gram is a di-cotyledon which is rich in proteins hence gram is the answer.

3. Find out the wrong statement from the following
(a) White revolution is meant for increase in milk production
(b) Blue revolution is meant for increase in fish production
(c) Increasing food production without compromising with environmental quality is called as sustainable agriculture
(d) None of the above

Soln:
Answer is (d) None of the above

Explanation:

Statements provided in option a), b) and c are right statements hence answer is d) none of the above.

4. To solve the food problem of the country, which among the following is necessary?
(a) Increased production and storage of food grains
(b) Easy access of people to the food grain
(c) People should have money to purchase the grains
(d) All of the above

Soln:

Answer is (d) All of the above

5. Find out the correct sentence

(i) Hybridisation means crossing between genetically dissimilar plants
(ii) Cross between two varieties is called as inter specific hybridisation
(iii) Introducing genes of desired character into a plant gives genetically modified crop
(iv) Cross between plants of two species is called as inter varietal hybridisation

(a) (i) and (iii)
(b) (ii) and (iv)
(c) (ii) and (iii)
(d) (iii) and (iv)

Soln:

Answer is (a) (i) and (iii)

6. Weeds affect the crop plants by
(a) killing of plants in field before they grow
(b) dominating the plants to grow (
c) competing for various resources of crops (plants) causing low availability of nutrients
(d) all of the above

Soln:

Answer is c) competing for various resources of crops (plants) causing low availability of nutrients

Explanation:

Few weeds are poisonous but it will not affect the crop plant. Weeds compete for the nutrients and water available in the soil. This makes the crop plant gets lesser nutrients than the requirement which lead to decrease of the crop yield.

7. Which one of the following species of honey bee is an Italian species?
(a) Apis dorsata
(b) Apis florae
(c) Apis cerana indica
(d) Apis mellifera

Soln:

Answer is (d) Apis mellifera

8. Find out the correct sentence about manure
(i) Manure contains large quantities of organic matter and small quantities of nutrients.
(ii) It increases the water holding capacity of sandy soil.
(iii) It helps in draining out of excess of water from clayey soil.
(iv) Its excessive use pollutes environment because it is made of animal excretory waste.

(a) (i) and (iii)
(b) (i) and (ii)
(c) (ii) and (iii)
(d) (iii) and (iv)

Soln:

Answer is (a) (i) and (iii)

Explanation:

Manure improves water holding capacity hence it cannot be responsible for draining out of excess water. Manure usage is not responsible pollution. Using manure is a eco-friendly method way of using fertilizers.

9. Cattle husbandry is done for the following purposes
(i) Milk Production
(ii) Agricultural work
(iii) Meat production
(iv) Egg production

(a) (i), (ii) and (iii)
(b) (ii), (iii) and (iv)
(c) (iii) and (iv)
(d) (i) and (iv)

Soln:

Answer is (a) (i), (ii) and (iii)

Explanation:

Cattle husbandry is done for the purpose of milk production, agricultural work and meat production. But poultry farming is done for egg production.

10. Which of the following are Indian cattle?
(i) Bos indicus
(ii) Bos domestica
(iii) Bos bubalis
(iv) Bos vulgaris

(a) (i) and (iii)
(b) (i) and (ii)
(c) (ii) and (iii)
(d) (iii) and (iv)

Soln:

Answer is (a) (i) and (iii)

Explanation:

Bos domestica is found in Africa and Bos vulgaris does not belong to Bos family.

11. Which of the following are exotic breeds?
(i) Brawn
(ii) Jersey
(iii) Brown Swiss
(iv) Jersey Swiss

(a) (i) and (iii)
(b) (ii) and (iii)
(c) (i) and (iv)
(d) (ii) and (iv

Soln:

Answer is (b) (ii) and (iii)

12. Poultry farming is undertaken to raise following
(i) Egg production
(ii) Feather production
(iii) Chicken meat
(iv) Milk production

(a) (i) and (iii)
(b) (i) and (ii)
(c) (ii) and (iii)
(d) (iii) and (iv)

Soln:

Answer is (a) (i) and (iii)

Explanation;

Hen does not produce milk and they are not reared for the purpose of feathers hence option ii) and iv) are wrong statements.

13. Poultry fowl are susceptible to the following pathogens
(a) Viruses
(b) Bacteria
(c) Fungi
(d) All of the above

Soln:

Answer is (d) All of the above

Explanation:

Viruses, bacteria and fungi causes diseases in poultry.

14. Which one of the following fishes is a surface feeder?
(a) Rohus
(b) Mrigals
(c) Common carps
(d) Catlas

Soln:

Answer is (d) Catlas

15. Animal husbandry is the scientific management of
(i) animal breeding
(ii) culture of animals
(iii) animal livestock
(iv) rearing of animals

(a) (i), (ii) and (iii)
(b) (ii), (iii) and (iv)
(c) (i), (ii) and (iv)
(d) (i), (iii) and (iv)

Soln:

Answer is (d) (i), (iii) and (iv)

16. Which one of the following nutrients is not available in fertilizers?
(a) Nitrogen
(b) Phosphorus
(c) Iron
(d) Potassium

Soln:

Answer is (c) Iron

Explanation:

Plants obtain iron from nutrients in the soil. There is no fertilizer that can prove iron for the plants.

17. Preventive and control measures adopted for the storage of grains include
(a) strict cleaning
(b) proper disjoining
(c) fumigation
(d) all of the above

Soln:

Answer is (d) all of the above

Short Answer Questions

18. Match the column A with the column B

(A)	**(B)**
(a) Catla	**(i) Bottom feeders**
(b) Rohu	**(ii) Surface feeders**
(c) Mrigal	**(iii) Middle-zone feeders**
(d) Fish farming	**(iv) Culture fishery**

Soln:

(a) Catla	(ii) Surface feeders
(b) Rohu	(iii) Middle-zone feeders
(c) Mrigal	(i) Bottom feeders
(d) Fish farming	(iv) Culture fishery

19. Fill in the blanks
(a) Pigeon pea is a good source of ———.
(b) Berseem is an important———crop.
(c) The crops which are grown in rainy season are called———crops.
(d) ———are rich in vitamins.
(e) ——— crop grows in winter season.

Soln:

(a) Pigeon pea is a good source of **Protein**.
(b) Berseem is an important **fodder** crop.
(c) The crops which are grown in rainy season are called **Kharif** crops.
(d) **Vegetables** are rich in vitamins.
(e) **Rabi** crop grows in winter season.

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

Soln:

A GM crop is the one which is developed by introducing a new gene from different source. Crops are genetically modified to obtain desired character. Example: BT cotton which has insect resistant gene from bacteria is grown in India.

21. List out some useful traits in improved crop?

Soln:

Below are the useful traits in improved crop.

- High yield of crop
- Improved crop quality
- Pest and weed resistance
- Wider adaptability
- Expression of desired agronomic characters.

22. Why is organic matter important for crop production?

Soln:

Organic matter is very important for crop production because of the following reasons

- Organic matter provides necessary minerals for the crops
- Organic matter loosen the soil structure to provide necessary aeration for the roots.
- Organic matter improves water holding capacity of the soil.
- Organic matter helps in drainage and to avoid water logging in clayey soil.

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

Soln:

Excess use of fertilizers is detrimental for environment because residue of fertilizers causes pollution in air, water and soil which proves costly.

24. Give one word for the following
(a) Farming without the use of chemicals as fertilizers, herbicides and pesticides is known as ———.
(b) Growing of wheat and groundnut on the same field is called as ———.
(c) Planting soyabean and maize in alternate rows in the same field is called as ———.
(d) Growing different crops on a piece of land in pre-planned succession is known as———.
(e) Xanthium and Parthenium are commonly known as———.
(f) Causal organism of any disease is called as ———.

Soln:

(a) Farming without the use of chemicals as fertilizers, herbicides and pesticides is known as **organic farming.**
(b) Growing of wheat and groundnut on the same field is called as **mixed cropping**.
(c) Planting soyabean and maize in alternate rows in the same field is called as **inter cropping**.
(d) Growing different crops on a piece of land in pre-planned succession is known as **crop rotation**.
(e) Xanthium and Parthenium are commonly known as **weeds**.
(f) Causal organism of any disease is called as **pathogen**.

25. Match the following A and B

(A)	**(B)**
(a) Cattle used for tilling and carting	**(i) Milk producing female**
(b) Indian breed of chicken	**(ii) Broiler**
(c) Sahiwal, Red Sindhi	**(iii) Drought animals**
(d) Milch	**(iv) Local breed of cattle**
(e) Chicken better fed for obtaining	**(v) Aseel**

Soln:

(A)	(B)
(a) Cattle used for tilling and carting	(iii) Drought animals
(b) Indian breed of chicken	(v) Aseel
(c) Sahiwal, Red Sindhi	(iv) Local breed of cattle
(d) Milch	(i) Milk producing female
(e) Chicken better fed for obtaining	(ii) Broiler

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

Soln:

Farmers are suggested to grow drought resistant crops which can mature early. Along with this farmers are advised to use manure for their field as it increases the water holding capacity of thesoil.

27. 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.

Soln:

Energy Yielding crop- Wheat rice Maize

Protein Yielding crop- gram, pigeon gram, lentil, soyabean

Oil yielding crop- groundnut, castor, mustard, soyabean

Fodder crop-barseem, oat, sudan grass

28. Define the term hybridization and photoperiod

Soln:

Hybridization- Crossing between genetically different organisms to produce desired characteristics in the offspring is known as hybridization.

Duration of the sunlight available for a plant is called as photoperiod. Photoperiod is responsible for the growth of the plant.

29. Fill in the blanks
(a) Photoperiod affect the————.
(b) Kharif crops are cultivated from————to————.
(c) Rabi crops are cultivated from————to————.
(d) Paddy, maize, green gram and black gram are————crops.
(e) Wheat, gram, pea, mustard are————crops.

Soln:

(a) Photoperiod affect the **Flowering process**
(b) Kharif crops are cultivated from **June** to **October**.
(c) Rabi crops are cultivated from **Novemeber** to **April.**
(d) Paddy, maize, green gram and black gram are **Kharif** crops.
(e) Wheat, gram, pea, mustard are **Rabi** crops.

30. Cultivation practices and crop yield are related to environmental condition. Explain.

Soln:

Different crops need different climatic conditions for the growth such as temperature, photoperiod and water. Some of the crops grown in rainy season which are called Kharif and some grow in winter which are called Rabi crops.

31. Fill in the blanks
(a) A total of——nutrients are essential to plants.
(b) ———and———are supplied by air to plants.
(c) ———is supplied by water to plants.
(d) Soil supply———nutrients to plants.
(e) ———nutrients are required in large quantity and called as———.
(f) ——— nutrients are needed in small quantity for plants and are called ———.

Soln:

(a) A total of **16** nutrients are essential to plants.
(b) **Carbon-di-oxide** and **Oxygen** are supplied by air to plants.
(c) **Hydrogen** is supplied by water to plants.
(d) Soil supply **13** nutrients to plants.
(e) **6** nutrients are required in large quantity and called as **macronutrients.**
(f) **7** nutrients are needed in small quantity for plants and are called **micronutrients**.

32. Differentiate between compost and vermicompost?

Soln:

Compost is formed by using farm waste materials like livestock excreta, vegetable waste, domestic waste, straw, discarded weeds. These all are decomposed and are used as manure for the farms.

Vermicompost is s compost prepared by using organic matter. Here composting is done by using earthworms.

33. 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.

Soln:
(b) Green plants are cultivated for preparing manure or crop plant parts are used.
(c) Plants are ploughed and mixed into the soil.
(a) Green plants are decomposed in soil.
(d) After decomposition it becomes green manure.

34. An Italian bee variety A. mellifera has been introduced in India for honey production. Write about its merits over other varieties.

Soln:

Advantages of Italian bee variety A. mellifera over other bee varities are as follows

- They stings less
- Their honey collection capacity is maximum.
- In stays in a single bee hive for very long period of time
- Its breeding capacity is high.

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

Soln:

Higher inputs gives higher yield refers to the facilities and financial status of a farmer. Good financial status allows farmers to take up new methodologies and technologies to increase the yield. Higher buying capacity decides cropping methods and agricultural practices.

Long Answer Questions

36. Discuss the role of hybridisation in crop improvement.

Soln:

Hybridization is a method of crossing two dissimilar varieties to get desirable characters in the off-springs. Hybridization improves the crop in following attributes

High yield: Hybridization helps to improve crop yield

Pest resistance: Crop can obtain pest resistance by incorporating pest resistance genes. Ex: BT Cotton

Draught resistance: Plants obtain draught resistant genes from draught resistant varieties.

Disease resistance: Plants can be immune to certain disease against which genes are incorporated.

37. Define (i) Vermicompost (ii) Green manure (iii) Bio fertilizer

Soln:

Vermicompost:

Manure which is rich is organic materials. Vermicompost is prepared by using earthworms, plant and animal waste. Earthworms helps in composting organic waste to give a nutrient rich manure.

Green Manure:

Manure prepared by composting green plant is known as green. Green manure is usually made in the field Ex: Hemp is allowed to decompose to get green manure.

Bio-fertilizers:

Usage of living organisms to provide nutrient to plant and to make soil fertile is known as bio fertilizers. Ex: Blue green algae used as bio-fertilizer in paddy fields.

38. Discuss various methods for weed control.

Soln:

Various methods of weed control are listed below

- Mechanical removal
- Preparation of seed bed
- Timely sowing of desired crop
- Crop rotation

39. Differentiate between the following
(i) Capture fishery and Culture fishery
(ii) Mixed cropping and Inter cropping
(iii) Bee keeping and Poultry farming

Soln:
Capture fishery is a traditional fishing where fisherman catches the fishes from natural resources like sea and rives. Culture fishery is the one where the fishes are obtained reared for the commercial purpose.

Mixed cropping is the method of growing two or more crops in a single field. Inter cropping is a type of mixed cropping where two or more crops are grown in a single field in a definite patterns.

Bee keeping is the method of rearing bees to obtain honey. Poultry farming is method of raising domestic fowl for the purpose of egg and meat.

40. Give the merits and demerits of fish culture?

Soln:

Merits of Fish culture

Desired fishes can be obtained in large amount in small area.

Improved food quality as fishes are the cheap source of proteins.

Demerits of fish culture

Only desired varieties of fishes are reared

It is threat to biodiversity.

41. What do you understand by composite fish culture?

Soln:

Composite fish culture is a method of rearing five to six varieties of fish species in a single pond. Species are selected in such a way that they should not compete with other for food because of change in their food habits. Hence fishes use food available in pond. Ex: Catla's are surface feeders. Rohu is middle zone feeder and common caps are bottom feeders.

42. Why bee keeping should be done in good pasturage?

Soln:

Bees need a quality nectar to produce honey. A good pasturage consists of plenty of flowers which can be used by bees to get quality nectar. This increase the quality as well as the quantity of the bees. If bees are confined to only single variety of flowers for nectar honey quality will have similar taste, consistency. Most of the farmers make honey obtained from single nectar.

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

Soln:

Below are the modes by which insects decrease crop yield.

a) Cutting:

Insects cut plant parts such as leaves, fruits, flowers etc. This damages the plant, damaged leaves result in decreased rate of photosynthesis , decreased flower decreases the production of seeds.

b) Borers:

Some pests bore holes in specific plant parts and start living inside. These pest utilize plant nutrients and food which result in the decrease in the yield.

c) Suckers

Few pests suck cell sap by using their proboscis. This result in adverse effect on plant which reduces the yield.

44. Discuss why pesticides are used in very accurate concentration and in very appropriate manner?

Soln:

Pesticides are used in very accurate and in very appropriate manner because of following reasons

Excess use of pesticides will reduce the fertility of the soil.

- Reduces the organic matter present in the soil
- Kills useful microorganisms present in the soil.
- Causes air, water and soil pollution.

45. Name two types of animal feed and write their functions.

Soln:

Roughage

Roughages are provided by husk, grass and chopped leaves. Roughages give complete nourishment to animals and roughages aids proper digestion in animals.

Concentrates

These are prepared as per the requirement of particular cattle and they are highly rick in proteins and minerals. Varieties of concentrates are available in the market.

46. 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?

Soln:

Temperature maintenance is vital for the better egg production. Even though if the size of poultry birds is large but without temperature adaptation egg production may decrease. To obtain high adaptability and small sized poultry. Cross breeding of poultry birds is done. Small size also require small food and small area to rear**.**

47. Suggest some preventive measures for the diseases of poultry birds.

Soln:

Preventive measures to avoid disease in poultry are

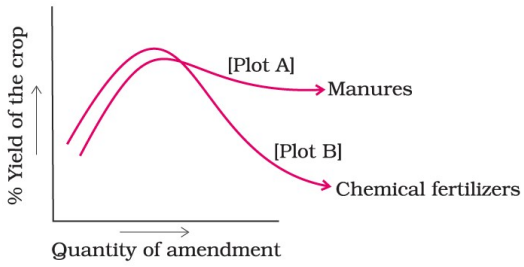
1.Cleaning: It is very important to maintain hygiene. Poultry farms should be cleaned regularly to maintain hygiene in the farm.

2. Sanitation: Sanitation should be maintained inside the farm

3.Disinfectatnts : Disinfectant should be sprayed on a regular basis.

4. Vaccination: Birds should be vaccinated to prevent disease in poultry.

48. Figure15.1 shows the two crop fields [Plots A and B] have been treated by manures and chemical fertilizers 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?



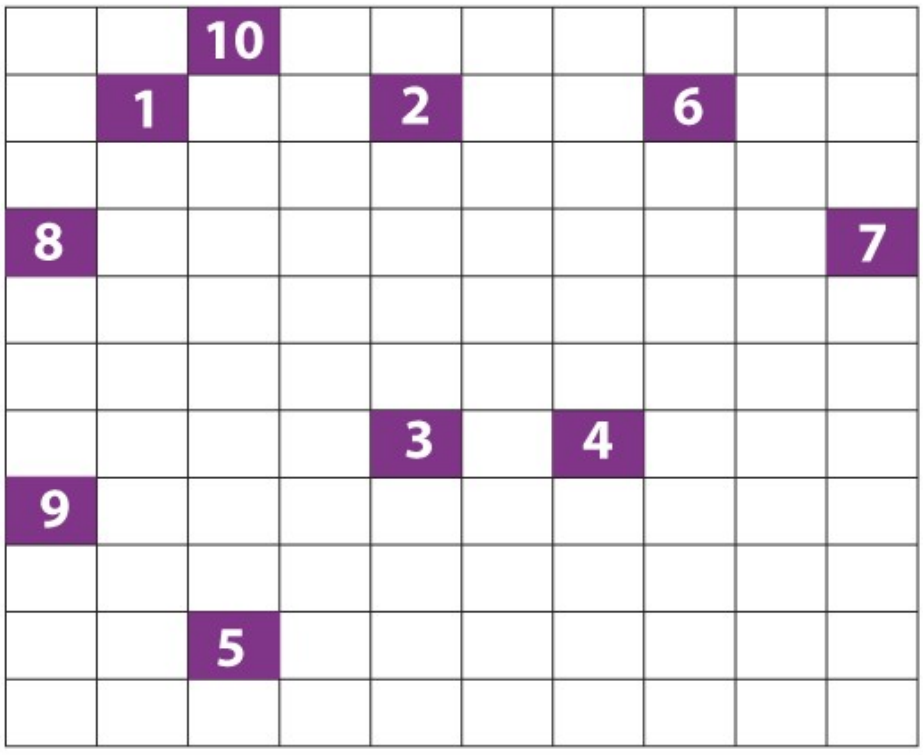
Soln:

i) When we chemical fertlizers there will be sudden increase in the yield as nutrients are released abundantly. But with time crop yield decrease because excess usage of chemical fertilizers kills the useful micro-organisms present in the soil and also reduces the organic material present in the soil.

ii) Manure release the nutrients slowly as they are rich in organic matter. But manure enriches the soil by providing nutrients and necessary environment for the growth of useful micro-organisms.

iii) Different pattern in the graph is due to the release of nutrients into soil by two different methods. Graph shows that excessive usage of chemical fertilizers is detrimental and using manure is beneficial for long time. Yield remain high when quantity of the manure increases.

49. Complete the crossword puzzle (Fig.15.2)



Across
1. Oil yielding plant (9)
3. Crop grown in winter season (4)
5. Fixed by Rhizobium (8)
9. Common honey bee (4)

Downward
2. Animal feed (6)
4. A micronutrient (5)

6. Unwanted plant in crop fields (4)
7. An exotic breed of chicken(7)
8. Bottom feeders in fish pond(7)
10. A marine fish (4)

Soln:

Across:

1.Sunflower
3. Rabi
5. Nitrogen
9. Apis

Down

2. Fodder
4.Boron
6.Weed
7. Leghorn
8.Mrigals
10.Tuna