
Improvement in Food Resources

Multiple Choice Questions

1. Which one is an oil yielding plant among the following?

- (a) Lentil
- (b) Sunflower
- (c) Cauliflower
- (d) Hibiscus

Ans. (b) Sunflower

Explanation: Lentils are pulse-yielding. Cauliflower is a vegetable and hibiscus is a flower. Seeds of sunflower are used for extracting oil.

2. Which one is not a source of carbohydrate?

- (a) Rice
- (b) Millets
- (c) Sorghum
- (d) Gram

Ans. (d) Gram

Explanation: Gram is a source of protein.

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

Ans. (d) None of the above

Explanation: All the three statements are correct.

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

Ans. (d) All of the above

Explanation: Production of food, access to food and affordability are the three main criteria for ensuring food security.

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)
-

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- (b) (ii) and (iv)
 - (c) (ii) and (iii)
 - (d) (iii) and (iv)

Ans. (a) (i) and (iii)

Explanation: Definition in option (ii) is of inter varietal hybridisation and definition in (iv) is of inter specific hybridisation.

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.

Ans. (c) competing for various resources of crops (plants) causing low availability of nutrients

Explanation: Some weeds may be poisonous for animals but they do not harm crops in direct way. Weeds create problems because they compete for various resources; like sunlight, air, water and nutrients.

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*

Ans. (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)

Ans. (b) (i) and (ii)

Explanation: Manure improves water holding capacity of soil and thus option 'iii' is incorrect. Manure is environment friendly and hence option 'iv' is incorrect.

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)

Ans. (a) (i), (ii) and (iii)

Explanation: Cattle do not give eggs and hence (iv) is wrong.

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)

Ans. (a) (i) and (iii)

Explanation: Domestica or vulgaris are not among the species of Genus Bos.

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)

Ans. (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)

Ans. (a) (i) and (iii)

Explanation: Chickens do not give milk, so (iv) is wrong. Feather of many birds are used for different purpose and hence (ii) is wrong.

13. Poultry fowl are susceptible to the following pathogens

(a) Viruses

(b) Bacteria

(c) Fungi

(d) All of the above

Ans. (d) All of the above

Explanation: Viruses, bacteria and fungi; all are agents of infectious diseases.

14. Which one of the following fishes is a surface feeder?

(a) Rohus

(b) Mrigals

(c) Common carps

(d) Catlas

Ans. (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)

Ans. (d) (i), (iii) and (iv)

Explanation: Tissue culture does not come under breeding programme, so (ii) wrong.

16. Which one of the following nutrients is not available in fertilizers?

(a) Nitrogen

(b) Phosphorus

(c) Iron

(d) Potassium

Ans. (c) Iron

Explanation: Iron is taken by plants from soil only and no fertilizer is available to supply iron to 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

Ans. (d) all of the above

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Short Answer Questions

18. Match the column A with the column B

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

Ans. (a)— (ii) (b)— (iii) (c)— (i) (d)— (iv)

19. Fill in the blanks

(a) Pigeon pea is a good source of _____.

Ans. protein

(b) Berseem is an important _____ crop.

Ans. fodder

(c) The crops which are grown in rainy season are called _____ crops.

Ans. Kharif

(d) _____ are rich in vitamins.

Ans. vegetables

(f) _____ crop grows in winter season.

Ans. Rabi

20. 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 any other source, to obtain the desired character, is called as genetically modified (GM) crop. But Cotton is an example of GM crop which is made insect resistant by introducing a new gene from a bacteria.

21. List out some useful traits in improved crop?

Ans. Useful traits of improved crops are

- (a) higher yield
- (b) improved nutritional quality
- (c) resistance to biotic and abiotic stresses
- (d) change in maturity
- (e) wide range of adaptability
- (f) desired agronomic characteristics.

22. Why is organic matter important for crop production?

Ans. Organic matter is important for crops because

- (a) it helps in improving soil structure.
 - (b) it helps in increasing water holding capacity of sandy soil.
-

(c) in clayey soil large quantity of organic matter helps in drainage and in avoiding water logging.

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

Ans. Excess use of fertilizers causes environmental pollution as their residual and unused amounts will become pollutants for air, water and soil.

24. Give one word for the following

(a) Farming without the use of chemicals as fertilizers, herbicides and pesticides is known as _____.

Ans. organic farming.

(b) Growing of wheat and groundnut on the same field is called as _____.

Ans. mixed cropping.

(c) Planting soyabean and maize in alternate rows in the same field is called as _____.

Ans. inter cropping.

(d) Growing different crops on a piece of land in pre-planned succession is known as _____.

Ans. crop rotation.

(e) Xanthium and Parthenium are commonly known as _____.

Ans. weeds.

(f) Causal organism of any disease is called as _____.

Ans. pathogen.

25. Match the following A and B

| Column A | Column 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 meat | (v) Aseel |

Ans. (a)—(iii) (b)—(v) (c)—(iv) (d)—(i) (e)—(ii)

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

Ans. Farmers of low rainfall area will 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.

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.

Ans. (1) Energy yielding— wheat, rice, maize

(2) Protein yielding— gram, pigeon gram, lentil, soybean

(3) Oil yielding— groundnut, castor, mustard, soybean

(4) Fodder crops— barseem, oat, sudan grass

28. Define the term hybridization and photoperiod.

Ans. Hybridization— Hybridization refers to crossing between genetically dissimilar organisms.

Photoperiod— Duration of sunlight available to the plant is called as photoperiod. It affects the growth, flowering and maturation of crops.

29. Fill in the blanks

(a) Photoperiod affect the _____.

Ans. Flowering of plants

(b) Kharif crops are cultivated from _____ to _____.

Ans. June to October

(c) Rabi crops are cultivated from _____ to _____.

Ans. November to April

(d) Paddy, maize, green gram and black gram are _____ crops.

Ans. Kharif

(e) Wheat, gram, pea, mustard are _____ crops.

Ans. Rabi

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

Ans. Different crops and cultivation practices require different climatic conditions, temperature, photoperiod for their growth and completion of life cycle. There are some crops which are grown in rainy season (Kharif crops) while some others are grown during winter season (Rabi crops).

31. Fill in the blanks

(a) A total of _____ nutrients are essential to plants.

Ans. 16.

(b) _____ and _____ are supplied by air to plants.

Ans. Carbon and Oxygen.

(c) _____ is supplied by water to plants.

Ans. Hydrogen.

(d) Soil supply _____ nutrients to plants.

Ans. 13.

(e) _____ nutrients are required in large quantity and called as _____.

Ans. Six, macronutrients.

(f) _____ nutrients are needed in small quantity for plants and are called _____.

Ans. seven, micronutrients.

32. Differentiate between compost and vermicompost?

Ans. Compost— Compost formation is 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— The compost prepared from organic matter by using earthworm which hastens the process of decomposition.

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.

Ans. (b) →(c) →(a) →(d)

34. 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 given bee-hive for long periods and breeds very well.

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

Ans. In agricultural practices, higher input gives higher yield. This means higher money input to raise the yield. Financial conditions of the farmers allows them to take up different farming practices and technologies. The farmer's purchasing capacity for input decides cropping system and production practices.

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Long Answer Questions

36. Discuss the role of hybridisation in crop improvement.

Ans. Hybridisation refers to crossing between genetically dissimilar plants. It may be inter varietal, inter specific and inter generic. Two crops of good characters (desired character) are selected and crossed to obtain a new crop having desired characters of parental crops. This method of hybridisation improves crops with respect to yield, disease resistance, pest resistance etc.

37. Define

(i) Vermicompost

(ii) Green manure

(iii) Bio fertilizer

Ans. (a) Vermicompost— Compost is a kind of manure which is rich in organic matter and nutrients. The compost prepared by using earthworms to hasten the process of decomposition of plants and animals refuse is called as Vermicompost.
(b) Green manure— The manure which is prepared by decomposing green plants in field itself is called green manure. For example — sun hemp is grown in fields, mulched by ploughing and allowed to decompose in field for the preparation of green manure.
(c) Bio fertilizer— Living organisms which are used as fertilizer to supply the nutrients to plants, are called as biofertilizers. For example, blue green algae, which fix nitrogen in soil, rice fields, are called as biofertilizer.

38. Discuss various methods for weed control.

Ans. Various modes of weed control are
(a) mechanical removal
(b) proper seed bed preparation to avoid the weed growth
(c) timely sowing of crop to avoid the growth of weed.
(d) intercropping and crop rotation also help in weed control.

39. Differentiate between the following

(i) Capture fishery and Culture fishery

(ii) Mixed cropping and Inter cropping

(iii) Bee keeping and Poultry farming

Ans. (a) Capture fishery is the method of obtaining fish from natural resources while culture fishery is the method of obtaining fish by fish farming.
(b) Mixed cropping is growing two or more crops simultaneously on the same piece of land; while intercropping is growing two or more crops simultaneously on the same field in a definite pattern. i.e., in different rows.
(c) Bee keeping is the practice to rear the honey bee for obtaining honey; while poultry farming is the practice to raise the domestic fowl for egg and meat production.

40. Give the merits and demerits of fish culture?

Ans. Demerits (i) threat to bio-diversity (ii) only economically important and valued fishes will be cultured.

Merits (i) large amount of desired fishes can be obtained in small area (ii) improvement can be done.

41. What do you understand by composite fish culture?

Ans. Composite fish culture is the method to culture five or six species, both indigenous and exotic, together in a single fish pond. These species are selected so that they do not compete for food among themselves having different types of food habits. As a result food available in all the parts of the pond is used. For example— Catla are surface feeders, Rohu is middle zone feeder and Mrigals and common carps are bottom feeders.

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

Ans. Bees need nectar to make honey. A good pasturage can provide plenty of flowers with good quality nectar. This will help the bees in making good quality honey; in larger quantity. Thus, a good pasturage will help in improving honey yield. Moreover, if bees are confined in order to utilize nectar only from a particular variety of flower, the taste, colour and consistency of honey will be entirely unique. Many beekeepers make honey prepared from nectar from a particular variety of flower only.

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

Ans. Following are the different modes by which insect pests affect the crop yield.

(i) Cutting: Some insect pests cut different plant parts; like leaves, fruits and flowers. Thus, they damage the plant. Damaged leaves would result in lower rate of photosynthesis. Damaged flowers will result in less production of seeds.

(ii) Borers: Some pests make a burrow in a plant part and live inside. There can be stem borers or fruit borers. These pests utilize resources from plants.

(iii) Suckers: Some pests use their proboscis to suck cell sap from plant parts.

44. 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 micro-organism of soil

(d) causes air, water and soil pollution.

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

Ans. Two types of animal feed are as follows:

Roughage: Roughage makes the bulk of animal feed. Roughage helps the animal in getting satiated. Roughage also helps in proper digestion of food. Roughage is provided by husk and hay and also by grass and chopped leaves.

Concentrates: Concentrates are rich in proteins and minerals. Concentrate are specially prepared according to the requirement of a particular cattle. Concentrates are also available in 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?**

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 the smaller size and higher summer adaptability, cross breeding of poultry birds are done. Small size is also needed for better housing and low feed.

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

Ans. Some preventive measures of poultry bird diseases are

- (a) cleaning of poultry farms
- (b) proper sanitation of poultry farms
- (c) spraying of disinfectants at regular intervals
- (d) appropriate vaccination of birds.

- 48. Figure 15.1 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.**

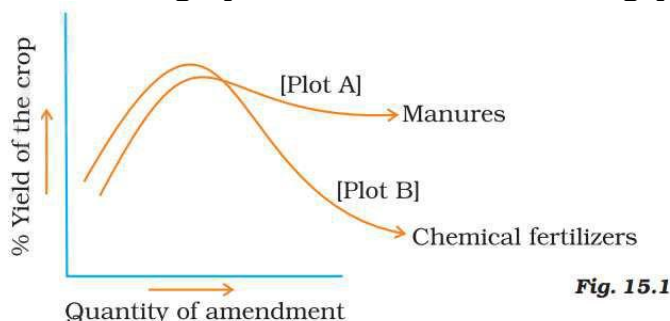


Fig. 15.1

- (i) Why does plot B show sudden increase and then gradual decrease in yield?**

Ans. With addition of chemical fertilizer 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) Why is the highest peak in plot A graph slightly delayed?**

Ans. 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) What is the reason for the different pattern of the two graphs?**
-

Ans. The difference 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 fertilizers 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.

49. Complete the crossword puzzle (Fig.15.2)

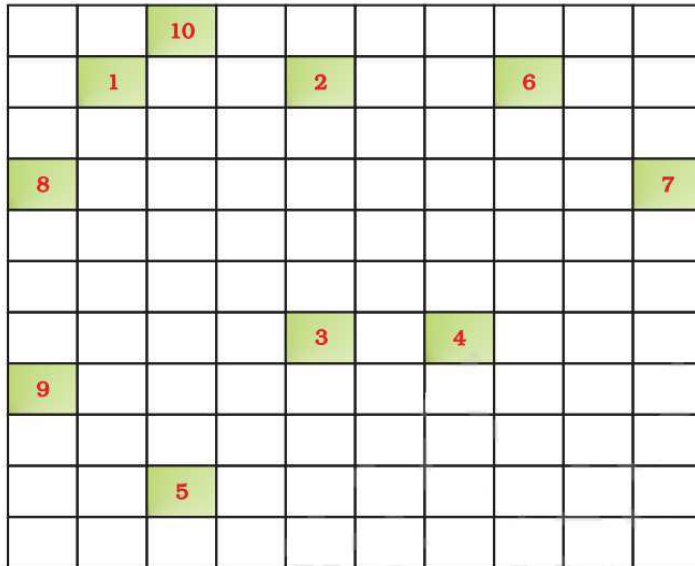


Fig. 15.2

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)

Ans. Crossword.

| | | | | | | | | | |
|----------------|----------------|-----------------|---|----------------|---|----------------|----------------|---|----------------|
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| | ¹ S | U | N | ² F | L | O | ⁶ W | E | R |
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