



মণিপুরৰ শিক্ষাৰ্থীৰ বাবে
DEPARTMENT OF EDUCATION (S)

Government of Manipur

CHAPTER 17 FOOD HIGHER YIELDS

SOLUTIONS

TEXTUAL QUESTIONS AND ANSWERS

1. Define plant breeding.

Ans: The process of developing new varieties, particularly in plants through selection and cultivation is known as **plant breeding**.

2. Name the different methods of plant breeding.

Ans: The methods of plant breeding are **selection, domestication, hybridization etc.**

3. What is biometrics?

Ans: The application of statistics in biology is defined as **biometrics**.

4. What are the common methods of plant selection?

Ans: The three common methods of plant selection are:

- a. **Pure line selection** - selection for uniform plants
- b. **Bulk/ mass selection** - selection from field grown plants.
- c. **Pedigree selection** - selection from a well-documented list of parentage.

5. Define hybridization.

Ans: The crossing of two different plant having different traits to bring together in a single individual is known as **hybridization**.

6. What is the main aim of combination breeding?

Ans: The main aim of combination breeding is to transfer one or more desired characters from many varieties into a single variety or plant type.

7. What is the most common method for carrying out combination breeding?

Ans: The most common method for carrying out combination breeding is **backcross method**.

8. Define hybrid vigour or heterosis.

Ans: The phenomenon in which hybrids are usually better than the parents themselves. This is known **hybrid vigour / heterosis**.

9. Name some commonly used chemical fertilizers.

Ans: Some commonly used chemical fertilizers are: **Ammonium sulphate, potassium chloride, super phosphate and potassium sulphate**.





17. What is farm yard manure?

Ans: It is a mixture of the solid and liquid-excreta of animals along with litter and left over materials from roughage or fodder feed to the cattle.

18. Give two differences between the edible and non-edible oil cakes.

Ans: The two points of **differences** between the edible and non-edible oil cakes are given below:

EDIBLE OIL CAKES	NON-EDIBLE OIL CAKES
1.They are used for feeding cattle and obtain from mustard, groundnut, linseed etc.	1. They are not suitable for feeding cattle and obtain from neem, castor etc.
2.They do not contain harmful toxic chemicals.	2. They contain harmful toxic chemicals.
3.They are not use for manuring crop fields.	3. They are mainly use for manuring crop fields.

19. What is meant by green manuring?

Ans: The practice that include growing, ploughing and mixing of green crops with soil to improve physical structure and soil fertility is referred to as **green manuring**.

20. What do you mean by vermicomposting?

Ans: The process of producing **vermicompost** by breakdown of organic matter by some species of earthworm is known as **vermicomposting**.

21. Enumerate the benefits of using vermicompost to soil.

Ans: **Vermicompost** provides benefit to soil:

- (a) Improve the physical structure, water holding capacity.
- (b) Enriched soil micro-organism, adding hormones and enzymes.
- (c) Enhanced germination, plant growth.
- (d) Improved root growth and structure.

22. What is Compost tea? What are its uses?

Ans: **Compost tea** is a liquid fertilizer obtained by mixing vermicompost in water and steeping for a number of hours or day.

- (a) It is used as a fertilizer.
- (b) It stimulates immune system to poultry.



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23. Name the different irrigation methods used in agriculture.

Ans: **The three methods of irrigation are:**

1. Surface irrigation.
2. Overhead (sprinkler) irrigation.
3. Drip (Trickle) irrigation

24. Enumerate the benefits of proper irrigation facilities.

Ans: **The benefits of proper irrigation facilities are:**

- (a) Improvement in crop quality.
- (b) Significant increase in crop yields, particularly on soils having low moisture content.
- (c) Increase opportunity for double cropping.

25. Define mixed cropping.

Ans: **Mixed cropping** is defined as the technique of growing two or three crops together on the same land, one being the main crop and others are the subsidiaries.

26. Define crop pests with examples.

Ans: **Crop pests** are the organisms that damage our crops. It includes **virus, bacteria, fungi, insects, annelids, arthropods**, etc.

27. Write a short note on bio-pesticide.

Ans: The use of living organisms to control pest is known as **bio-pesticides**. Bio-pesticides include biological entity such as fungi, insects, virus etc. They are environment friendly pesticides and include naturally occurring substances (biochemical pesticides), microbes (microbial pesticides) and pesticidal substances (plant-incorporated protectants) etc.

28. Write on the use of fungi as a biopesticide.

Ans: **The use of fungi as biopesticides:**

- (a) **Fungi to control insects:** Many fungi are capable of infecting and killing insects. **Fungal spores** are also used to control weeds.
- (b) **Fungi to control weeds:** The use of fungi to control weeds is termed as **mycoherbicides** which is an environment friendly control method.
- (c) **Fungi to control other fungi:** Several fungi are used to control the plant fungal pathogens. The damping of diseases that affects seedlings can be controlled by using fungi.



29. What do you mean by organic farming? What are the advantages of organic farming?

Ans: **Organic farming** is a form of agricultural practice which avoids or largely excludes the use of synthetic fertilizers, pesticides, plant growth regulators, and livestock feed additives.

Advantages of organic farming:

- (a) The market price for such products is higher.
- (b) The way in which they are produced involves less intensive use of land.
- (c) The attainment of a better balance between supply of, and demand for, agriculture products.
- (d) Better protection of the environment.

30. What do you mean by animal husbandry? How can animal husbandry improve the rural economy?

Ans: The agricultural practice of breeding and raising live stock is known as **animal husbandry**.

It is an integral part of crop farming and contributes substantially to household nutritional security and poverty alleviation through increased household income. The returns from the livestock, especially dairying and mixed farming represent a sustainable income for the farmers. The progress in this sector results in more balanced development of the rural economy and improvement in economic status of the poor people associated with livestock.

31. Write five economic values of livestock.

Ans: **The economic values of livestock are listed below:**

- (a) Livestock provides us dietary protein and energy.
- (b) Mammalian livestock is a good source of milk, and dairy products such as yoghurt, cheese, butter, ice cream etc.
- (c) It produces a large range of fibres/textiles.
- (d) Cow dung can be spread on fields to increase crop yields.
- (e) Animals such as horses, cows and buffaloes can be used for mechanical energy.



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32. Define piggery. What are the advantages of pig farming in Manipur?

Ans: The agricultural practice of rearing of pigs to obtain meat, manure as well as bristle is known as **piggery**.

Advantages of pig farming in Manipur:

- (a) Provide employment opportunities among youths.
- (b) Can improve standard of living by earning good income.
- (c) It is a small investment venture.
- (d) Pig manure can be used as fertilizers in agricultural field and fish pond.
- (e) Can provide good source of fat as well as vitamins.
- (f) Pig can utilize a wide variety of feedstuffs.

33. Write what you know about composite fish culture.

Ans: The type of fish culture in which more than one type of compatible fishes is cultured simultaneously is known as **composite fish culture**. The food available in all parts of the pond is used up by selecting species that do not compete with each other thereby increasing fish yield.

The technical requirements are: construction of pond, pond management (pre-stocking including liming & pond fertilization), stocking, post-stocking (supplementary feeding & manuring) and harvesting.

34. Name the Indian and exotic carps which can be cultured together.

Ans: The Indian and exotic carps which can be cultured together are:

- (a) **Catla** (*Catla catla*),
- (b) **Rohu** (*Labeo rohita*),
- (c) **Mrigal** (*Cirrhinus mrigala*),
- (d) **Silver carp** (*Hypophthalmichthys molitrix*),
- (e) **Grass carp** (*Ctenopharyngodon idella*),
- (f) **Common carp** (*Cyprinus carpio*) etc.



EXTRA QUESTIONS AND ANSWERS

1. What is domestication?

Ans: **Domestication** refers to the process of bringing wild species under human management.

2. Who first introduced the method of hybridization?

Ans: **J.G. Kolreuter**

3. What are donor parents and recipient parents?

Ans: In plant hybridization experiment, the plant type in which the character is being transferred is known as **recipient parent** and the other type from which the character is transferred is called the **donor parent**.

4. What is distant hybridization?

Ans: The **hybridization** of parents belonging to different species or genera is known as wide or **distant hybridization**.

5. Mention the advantage of distant hybridization.

Ans: **Distant hybridization** has helped in the transfer beneficial characteristics from wild and weedy plants to the cultivated crop species.

6. What are fertilizers?

Ans: **Fertilizers** are naturally occurring or synthetic chemicals containing plant nutrients.

7. What is water logging?

Ans: The condition where water is present in excess amount in the soil is known as **water logging**.

8. Write two harmful effects of water logging.

Ans: **The harmful effects of water logging are:**

- (a) It reduces air in the soil restricting respiration by underground parts of the plant.
- (b) At the same time, many nutrients are lost through leaching.
- (c) Crop plants could not grow in such condition.

9. Name three seasons found in northern India.

Ans: **The three seasons found in northern India are:**

- (a) **Kharif** (July to October) - Rainy season, e.g. Paddy, Maize, Soyabean
- (b) **Rabi** (October to March) – Winter season e.g. Wheat, Gram, Pea, Mustard, etc. and
- (c) **Zaid** (March to June) – Summer season waiting for Monsoon e.g. cucumber, pumpkin, bitter gourd, etc.



10. What are pests?

Ans: **Pests** are the organisms that damage crop plants.

11. Define integrated fish farming.

Ans: **Integrated fish farming** is combined culture of fish together with compatible combinations with poultry, duckery, pig rearing and cattle farming.

12. Name three important breeds of Indian cow that belong to *Bos indicus*.

Ans: **Red Sindhi, Nelore and Sahiwal.**

13. Name the exotic breeds of cow that belong to *Bos taurus*.

Ans: **Holstein, Friesian, Brown, Jersey, Swiss, Angus** etc.

14. Name three common diseases of cattle.

Ans:

- (a) Foot and mouth disease,
- (b) bloat,
- (c) anthrax,
- (d) mad cow disease,
- (e) foot rot,
- (f) bovine diarrhoea etc. **(Please choose any 3)**

15. Write the essential bee-keeping activities

Ans: **The essentials bee-keeping activities are:**

- (a) Knowledge of habit and behaviour of the bees.
- (b) The necessary tools (hive, etc.) are to be procured.
- (c) Place the hive in a region rich in flowering plants.
- (d) Arrange the hive receive sunlight in the morning and evening, and some shade during mid-day.
- (e) Water should be available nearby and open space in front of hive entrance is necessary.
- (f) Spring is the best season to start bee keeping.
