CBSE

IMPROVEMENT IN FOOD RESOURCES WS 1

Class 09 - Science

Section A

1. **Assertion (A):** The process of supplying water to crop plants by means of canals, wells, reservoirs, tube-wells, etc. is known as irrigation. **[1]**

   Reason (R): Most agriculture in India is rain-fed.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

2. **Assertion (A):** The compost is rich in organic matter and nutrients. **[1]**

   Reason (R): Compost prepared by using earthworms to hasten the process of decomposition of plant and animal for refuse is called vermicompost.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

3. **Assertion (A):** Usage of manure is advantageous for our environment. **[1]**

   Reason (R): Manure contains chemical substances like nitrogen, phosphorus and potassium.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

4. **Assertion (A):** The growth of weeds in the crop fields is harmful. **[1]**

   Reason (R): They compete for food, space, and light.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

5. **Assertion (A):** Fungicides act against fungal pathogens. **[1]**

   Reason (R): Fungicides are not harmful to human beings.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

6. **Assertion (A):** The chewing insects destroy all sorts of crop plants. **[1]**

   Reason (R): They cut the root, stem, and leaf of the crop plants with the help of their chewing mouthparts.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

7. **Assertion (A):** To replenish the lost nutrients in the soil, quick-acting, handy nutrients are applied in the form of fertilizers. **[1]**

Reason (R): Chemical fertilizer contains the necessary plant nutrients.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

8. **Assertion (A):** There are two factors that are responsible for the loss of grains during storage - biotic factors and abiotic factors. **[1]**

Reason (R): Biotic factors are inappropriate moisture, temperature, and humidity in the place of storage.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

9. **Assertion (A):** Mixed cropping is growing two or more crops simultaneously on the same piece of land. **[1]**

Reason (R): Fertility of soil is improved by growing two crops simultaneously.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

10. **Assertion (A):** The grains should be washed before storage. **[1]**

Reason (R): They should be filled in new gunny bags before keeping in godowns, warehouses, or stores.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

11. Which type of water resource system is used for the irrigation of crops is shown in the given image? **[1]**

a) Well

b) Canal system

c) River lift system

d) Tank

12. Which cropping method is shown in the given image? **[1]**

a) Terrace farming

b) stripcropping

c) Mixed cropping

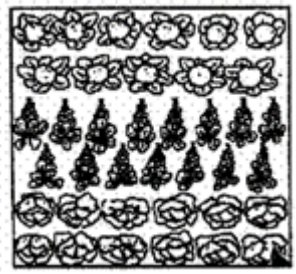
d) Crop rotation

13. The process of cross breeding two different varieties of crop plants each having a desired characteristic, is **[1]**

known as _____

a) Crossing
b) Introduction
c) Hybridization
d) Selection

[1]

14. 

The figure given above represents :

a) intercropping
b) organic farming
c) mixed cropping
d) crop rotation

15. Match the following with the correct response. **[1]**

(a) Roughage	(i) Nutrient-rich
(b) Concentrates	(ii) DDT
(c) Biofertilizers	(iii) Nostoc, Anabaena
(d) Biomagnification	(iv) Fibre-rich

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

16. Match the following with the correct response. **[1]**

(a) Green manure	(i) Hydrogen
(b) Vermicomposting	(ii) Earthworms
(c) Micronutrient	(iii) Cluster bean
(d) Macronutrient	(iv) Chlorine

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

17. Match the following with the correct response. **[1]**

(1) Disease of fish	(A) Foot and mouth disease
(2) Common weed	(B) Amaranthus
(3) Bacterial disease of cattle	(C) Viral Haemorrhage septicemia
(4) Viral disease of cattle	(D) Rinderpest

a) 1-C, 2-B, 3-D, 4-A
b) 1-B, 2-D, 3-A, 4-C
c) 1-A, 2-C, 3-B, 4-D
d) 1-D, 2-A, 3-C, 4-B

18. Match the following with the correct response. **[1]**

(1) Roughage	(A) Nostoc, Anabaena

(2) Concentrates	(B) Fibre rich
(3) Biofertilizers	(C) DDT
(4) Biomagnification	(D) Nutrient-rich

a) 1-A, 2-C, 3-B, 4-D
b) 1-C, 2-B, 3-D, 4-A
c) 1-B, 2-D, 3-A, 4-C
d) 1-D, 2-A, 3-C, 4-B

19. Match the following with the correct response. **[1]**

(1) Green manure	(A) Earthworms
(2) Vermicomposting	(B) Hydrogen
(3) Micronutrient	(C) Chlorine
(4) Macronutrient	(D) Cluster bean

a) 1-B, 2-D, 3-A, 4-C
b) 1-D, 2-A, 3-C, 4-B
c) 1-C, 2-B, 3-D, 4-A

20. Kranti, Pusa Agarni and Pusa bold are improved varieties of _____ **[1]**

a) Chick Pea
b) Mustard.
c) Urad bean
d) Sunflower

21. **Statement A:** Pesticides used for spraying are not volatile. **[1]**
Statement B: Fumigants are volatile
Which of the two statement is true

a) Both A and B are false
b) Statement A
c) Both A and B
d) Statement B

22. **Statement A:** Methyl Bromide is a liquid fumigant. **[1]**
Statement B: Excreta of birds contain bacteria salmonella which causes food poisoning.
Which of the two statements is true?

a) Statement B
b) Both a and b
c) Both a and b incorrect
d) Statement A

23. Find out the correct sentences. **[1]**

i. Hybridization means crossing between genetically dissimilar plants.
ii. Cross between two varieties is called as inter-specific hybridization.
iii. Introducing genes of the desired character into a plant gives genetically modified crop
iv. Cross between plants of two species is called as inter-varietal hybridization.

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

24. Identify the CORRECT statement that describes interspecific hybridization. **[1]**

a) Crossing between plants of two same varieties
b) Crossing between plants of two different genera

c) Crossing between plants of two different varieties

d) Crossing between plants of two different species of same genus

25. Out of the following statements one is INCORRECT about insect pests. Identify. **[1]**

a) They bore into stem and fruits

b) They compete with the plant for food, space and light

c) They suck the cell sap

d) They cut the root, stem and leaf

26. Find the incorrect statement. **[1]**

a) The painted bug is a pest of mustard plant

b) Pesticides are toxic chemicals

c) Blast is a viral disease of Paddy

d) Puccinia causes rust disease in wheat

27. Which of the following is incorrect for green manure? **[1]**

a) It supplies organic matter

b) It allows leaching

c) It supplies nitrogen

d) It prevents soil erosion

28. Identify the macro-nutrient **[1]**

a) Cobolt

b) Zinc

c) Boron

d) Calcium

29. Identify the group among the following, which contains only micronutrients: **[1]**

a) Copper, calcium, chlorine, molybdenum

b) Manganese, zinc, copper, iron

c) Nitrogen, iron, manganese, boron

d) Magnesium, iron, copper, calcium

Section B

30. **State True or False:** **[2]**

(a) Organic substances of animal or plant origin that is added to the soil to increase its fertility and structure are called manures. **[1]**

(b) Irrigation is essential to ensure agricultural success in India since our agriculture is mainly rain-fed. **[1]**

Section C

31. **[3]**

Answer the following questions:

i. Soybean and maize can grow simultaneously on the same field explain?

ii. What is the main purpose of mixed cropping?

iii. Enlist various methods to control weed, insect, and disease.

[3]

32.

Answer the following questions:

i. How can we genetically modify crops?

ii. What is a various factor that is essential for good quality crops?

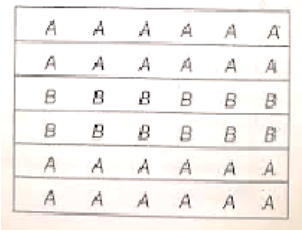
iii. Enlist the abiotic stresses to bear by crops.

33. Observe the following figure and answer the questions that follow. **[3]**

A - First type of crop

B - Second type of crop

Box represents the agricultural field in which crops are grown.



i. Which type of cropping pattern is seen in the picture?

ii. Discuss this cropping pattern.

iii. What should be kept in mind regarding the types of crops, while following this cropping method?

[3]

34.

Answer the following questions:

i. What is the main purpose of green manure?

ii. Name any two plants which can be used for green manure.

iii. What is the advantage of using biological manure?

[3]

35.

Answer the following questions:

i. Fertilizers have short term benefits but long term use of it is harmful. Explain.

ii. What are the uses of fertilizers?

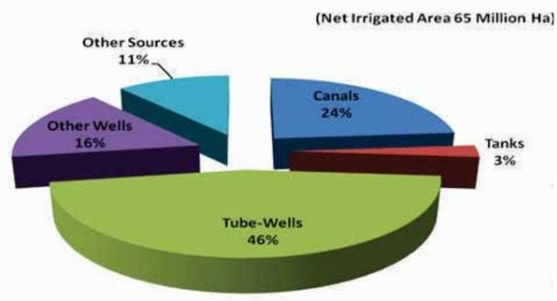
iii. What is the major problem of using fertilizers in a high dose?

Section D

Question No. 36 to 39 are based on the given text. Read the text carefully and answer the questions: **[4]**

Irrigation

The process of supplying water to crop plants through human efforts by means of canals, wells, reservoirs, tube wells etc., is known as irrigation. Most agriculture in India is dependent on timely monsoons and sufficient rainfall spread through most of the growing season. However, the extra water required by crops is met through irrigation.



36. Which is the most common source of irrigation?

37. Mention the various sources of irrigation.

38. Which is the least use source of irrigation?

39. What are the other sources of irrigation?

40. **Irrigation** **[4]**

The process of supplying water to crop plants through human efforts by means of canal, wells, reservoirs, tube-wells etc., is known as irrigation. Most agriculture in India is dependent on timely monsoons and sufficient rainfall spread through most of the growing season. However, the extra water required by crops is met through irrigation.

Sources of Irrigation

Some most commonly used sources of irrigation are the following:

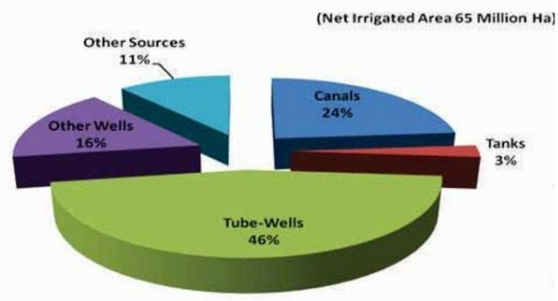
i. **Wells: T**hese are of two types:
Dug wells where water is collected from water-bearing strata through bullock-operated devices or by pumps.
Tube wells where water is collected from underground through diesel or electricity run pumps.

ii. **Canal system:** Water from the main river or reservoir is carried by a canal into the field which is divided into branch canals having further distributed to irrigate fields.

iii. **River lift system:** In this system, water is directly drawn from the river for supplementing irrigation. It is used where the insufficient flow from canals occur.

iv. **Rainwater harvesting:** Rainwater is collected and recycled into the ground by digging canals.

v. **Watershed management:** Small check dams are built up in watershed areas to increase percolation of water into the ground, reduce the flow of rainwater to prevent soil erosion.



Based on the pic chart answer the following questions;

i. Which is the most common source of irrigation?

ii. Mention the various sources of irrigation.

iii. Which is the least use source of irrigation?

iv. What are the other sources of irrigation?

41. **Crop Production Improvement** **[4]**

It involves different practices carried out by the farmer to achieve higher standards of crop production. Main practices involved in crop production management are Nutrient Management, Irrigation, and Cropping Patterns.

Nutrient Management

Like other organisms, plants also require some elements for their growth. These elements are called Nutrients. There are sixteen nutrients which are essential for plants. These nutrients are divided into the following two categories:

- **Macronutrients:** The essential elements, which are utilized by plants relatively in large quantities, are called macronutrients.
- **Micronutrients:** The essential elements, which are used by plants in small quantities, are called micronutrients.

These nutrients are supplied to plants by air, water and soil.

Sources	Nutrients
Air	Carbon, Oxygen
Water	Hydrogen, Oxygen
Soil	**Macronutrients:** Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur.
	Micronutrients: Iron, Manganese, Boron, Zinc, Copper, Molybdenum, Chlorine.

Answer the following questions:

i. Differentiate between macronutrients and micronutrients.

ii. List all macronutrients.

iii. List all micronutrients.

iv. _____ is the main source of Carbon and Oxygen.

42. **Manure & Fertilizer** **[4]**

To meet the requirement of plant nutrients and essential organic matter in the soil, manures and fertilizers are added to the soil.

Manure

i. It is a kind of natural fertilizer formed from the decomposition of animal excreta and plant waste.
ii. It mainly contains organic matter and some nutrients in a small amount.
iii. It helps in improving the soil structure by increasing the water holding capacity soil.

Types of manures: Based on the kind of biological waste material used, the manures are classified as:

i. **Farmyard manure (FYM):** It is the decomposed mixture of cattle excreta (dung) and urine along with litter and leftover organic matter such as roughage or fodder. The waste materials are collected daily from the cattle shed and stored in a pit for decomposition by the microorganisms (bacteria and fungi etc.). FYM contains Nitrogen, Phosphorous and Potassium.
ii. **Compost:** It is a mixture of decomposed organic matter derived from garbage, sewage, vegetable waste etc. The mixture is decomposed in pits and the process is known as composting.
iii. **Vermicompost:** The degradation of organic waste through consumption by the earthworms is called vermicomposting. Earthworms used in vermicomposting are *Dichogaster bolani* and *Drawida willisi*.
iv. **Green manure:** It is prepared by cultivating fast-growing green manure crops like Sunhemp, Horse gram, Guar, Cowpea before sowing of seeds. The fast-growing crop is then ploughed back under the soil. Green manure enriches the soil with nitrogen, phosphorous as well as organic matter and provides protection against erosion and leaching.

Fertilizers

i. Fertilizers are chemicals manufactured in factories and are highly rich in nutrients like nitrogen, phosphorus and potassium.
ii. They provide a large number of nutrients and thus ensure better growth of plants.
iii. Excessive use of fertilizers for a long period of time can damage soil fertility.

Answer the following questions:

i. Differentiate between manures and fertilizers.
ii. Excess use of _____ can reduce the fertility of the soil.
iii. In Green manure, which types of nutrients are present? What is the main purpose of using green manure in agriculture?
iv. Out of manures and fertilizers, which one has better water holding capacity? Give the reason for your answer.

43. **Crop Season:** Different crops require different climatic conditions like temperature, moisture and photoperiods to grow well and complete their life cycle. **[4]**

The Indian cropping season is classified into two main seasons-(i) Kharif and (ii) Rabi based on the monsoon. The characteristics of these two main corp seasons are:

i. **Kharif Season:**
   - Summer season from the month of June to October, i.e., during the rainy season.
   - Crops grown in this season require more water.

- Examples of Kharif season crops are Paddy, soybean, pigeon pea, maize, black gram, green gram and rice.

ii. **Rabi Season:**

1. Winter season from the month of November to April.
2. Crops grown in this season require less water.
3. Examples of Rabi season crops are Wheat, gram, peas, mustard and linseed.

Answer the following questions:

i. Mention the various cropping seasons in India.
ii. Differentiate between Rabi and Kharif crop.
iii. Give any two examples of Rabi and Kharif crops.
iv. What is zaid crop? Give example.

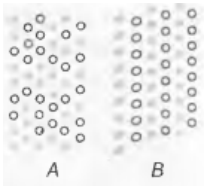
Section E

Question No. 44 to 48 are based on the given text. Read the text carefully and answer the questions: **[5]**

Cropping pattern refers to the proportion of land under cultivation of different crops at different points of time. Intercropping is the practice of growing more than one crop on the same field at the same time in a definite row pattern. It is much superior to mixed cropping. Intercropping can incorporate crop rotation. The technique makes the farmers busy throughout the year. Productivity is increased. Soil erosion is prevented. Pests and weeds remain under control.

44. What is Inter-cropping?
45. Why intercropping is superior to all other means of cropping?
46. Which method of cropping prevents soil erosion by checking soil creep after harvesting a crop?
47. Modern cropping is based on machines from sowing to harvesting. Which is the best method of cropping for this?
48. In which cropping same fertilizers are used for all the crops?
49. i. The black and the white dots in the given picture are an indication of two different types of cropping patterns. Identify the cropping patterns. **[5]**
    ii. Mention one advantage of each cropping pattern.

iii. How are the two cropping patterns different from each other?



50. What are weeds? Enlist the methods employed to control weeds. **[5]**

51. Discuss the role of hybridisation in crop improvement. **[5]**

52. Explain any one method of crop production which ensures high yield. **[5]**

53. Mention the modern initiatives undertaken in India to supply water to the fields. **[5]**

54. Describe the main irrigation systems that are adopted in India. **[5]**

55. What are the different ways of increasing production? Give examples. **[5]**

56. (a) Give any three preventive measures for pest control. **[5]**

(b) How does storage of grains lead to losses? What preventive and control measures are used before grains are stored for future use?

57. Why is crop variety improvement important in cultivation? Describe the important factors for which variety improvement is done. **[5]**

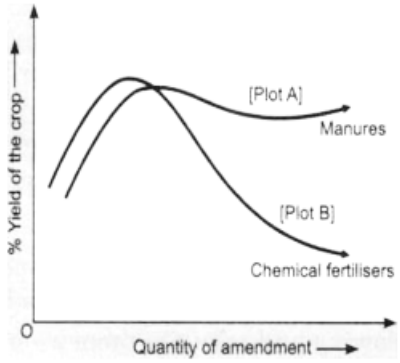
58. Figure shows the two crop Heads [plots A and B] have been treated by manures and chemical fertilisers respectively, keeping the environmental factors same. **[5]**

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?



59. State one indicator each for infestation by insects and rodents in stored food grains. Describe one method each for controlling the population of insects and rodents. **[5]**

60. How can crop variety improvement methods help farmers facing repeated crop failure? Describe three factors for which they could do crop improvement. Which is the most common method of obtaining improved varieties of crops? Explain briefly. **[5]**

61. How do storage grain losses occur? **[5]**

62. What are the advantages of intercropping and crop rotation? **[5]**

63. How do biotic and abiotic factors adversely affect crop production? **[5]**

64. You are living in an area with abundant greenery and pasturage. A farmer living near your home is not satisfied with the income he gets from his agricultural land. Which additional income generating activity will you suggest him in such a scenario? **[5]**

65. Cultivation practices and crop yield are related to environmental conditions. Explain. **[5]**

Section F

66. **Fill in the blanks:** **[9]**

(a) Xanthium and Parthenium are commonly known as _____. **[1]**

(b) Growing of wheat and groundnut on the same field is called as _____. **[1]**

(c) Farming without the use of chemicals as fertilizers, herbicides, and pesticides is known as _____. **[1]**

(d) Photoperiod affect the _____. **[1]**

(e) Paddy, maize, green gram, and black gram are _____ crops. **[1]**

(f) A total of _____ nutrients are essential to plants. **[1]**

(g) Rabi crops are cultivated from _____ to _____. **[1]**

(h) Kharif crops are cultivated from _____ to _____. **[1]**

(i) Growing different crops on a piece of land in pre-planned succession is known as _____. **[1]**