



# BIOLOGY

## BOOKS - CENGAGE BIOLOGY

### IMPROVEMENT IN FOOD RESOURCES : PLANTS

#### Question

1. Tea and coffee are \_\_\_\_\_ crops.



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2. Name the plant macronutrients.



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3. State two qualities of essential nutrients.



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4. Manure prepared from fodder and dung is  
\_\_\_\_\_ manure.



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**5.** Name the method of the irrigation system followed in the following:

Coffee plantation



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**6.** Name the method of the irrigation system followed in the following:

Orange orchard





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7. Name the method of the irrigation system followed in the following:

Rice field



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8. 2,4-D is a



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9. Name three kinds of organisms which cause diseases in plants.



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10. What are the causes of spoilage of stored grains?



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11. In mixed cropping, why do both types of plants have complementary features and

requirements?



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**12.** What is the disadvantage of growing the same crop continuously?



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**13.** Write any two improved variety of the following:

Rice



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**14.** Name the improved varieties of the following crops: (a) pigeon pea , (b) wheat



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## Mandatory Exercise Exercise Set I

**1.** Define (a) agriculture and (b) agronomy.



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2. The science of vegetable culture is called \_\_\_\_\_.



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3. Which of the following is the proper sequence of agricultural steps?

A. Seed treatment, preparation of soil, addition of fertilisers, preparation of



seedbed

B. Preparation of soil, seed treatment,  
preparation of seedbed, addition of  
fertilisers

C. Preparation of seedbed, preparation of  
soil, seed treatment, addition of  
fertilisers

D. Addition of fertilisers, preparation of  
soil, seed treatment, preparation of  
seedbed

**Answer: B**



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4. Write the properties of soil to increase the production of crops.



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5. Suggest two advantages and disadvantages of the following:

Organic manures (e.g., compost or farmyard

manure)

Advantages:

Disadvantages:



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**6. Suggest two advantages and disadvantages of the following:**

Chemical fertilisers

Advantages:

Disadvantages:



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**7. Differentiate between the following:**

Surface irrigation and sprinkler irrigation



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**8. Differentiate between the following:**

Rabi and kharif crops



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**9. Differentiate between the following:**

Annuals and perennials



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**10. Name the groups of fertilisers.**



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**11. Why should fertilisers be used in small quantities?**



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**12.** A farmer uses urea in a pea crop. Is he correct or not? Give reason.



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**13.** 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 of crop plants parts are used.

(c) Plants are ploughed and mixed into the soil.

(d) After decomposition it becomes green manure.



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**14.** Name two common weeds.



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15. If we excessively use pesticides to protect the crops from diseases, then it may cause long-term damage to mankind'. Justify this statement.



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## Mandatory Exercise Exercise Set II

1. Give examples for the following:

Seed-borne diseases: \_\_\_\_\_





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2. Give examples for the following:

Air-borne diseases: \_\_\_\_\_



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3. Give examples for the following:

Soil-borne diseases: \_\_\_\_\_



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4. Give examples for the following:

Water-borne diseases: \_\_\_\_\_



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5. Which are the major insect and disease attacking the paddy crop?

Insect: \_\_\_\_\_

Disease: \_\_\_\_\_



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6. Give one example each where fumigation and spraying is more suitable.



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7. Name any two storage pests of food grains found commonly in India.



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8. A farmer grows leguminous crops alternately with cereal crops. Which agricultural practice is he following? Write any two advantages of it.



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9. Differentiate between the following:

Agro forestry and horti-pastoral systems



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10. Differentiate between the following:

Mixed cropping and intercropping



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11. Crop rotation intensity =  
$$\frac{\text{number of crops in crop rotation}}{?} \times 100$$



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12. What is monetary benefit?





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**13.** If you were a farmer, what criteria would you consider before selecting crops for mixed cropping?



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**14.** List out some useful traits in improved crop ?



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**15. Define 'Selection'**



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**16. Define hybridisation.**



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**17. Credit of Green Revolution in our country goes to**

A. Aryabhata

B. Dr. V.Kurien

C. Dr. M.S. Swaminathan

D. Dr. H.G. Khorana

**Answer: C**



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**18.** Some of the high-yielding varieties of crops are Ganga 101, Sarbati Sonora, Pusa Lerma, and



Jaya.

Which of these represents wheat?



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**19.** Some of the high-yielding varieties of crops are Ganga 101, Sarbati Sonora, Pusa Lerma, and Jaya.

Which of these represents rice?



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**20.** Some of the high-yielding varieties of crops are Ganga 101, Sarbati Sonora, Pusa Lerma, and Jaya.

Which of these represents maize?

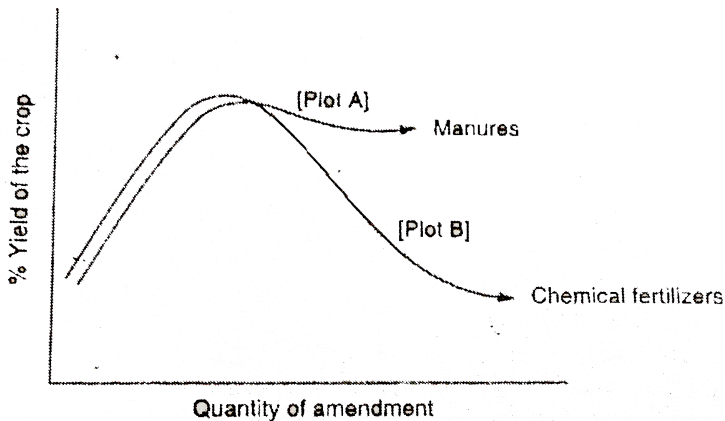


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## Consolidated Exercise

**1.** The figure shows two crop fields (plots A and B) have been treated by manures and chemical

fertilizers, respectively, keeping other environment factors same. Observe the graph and answer the following question:

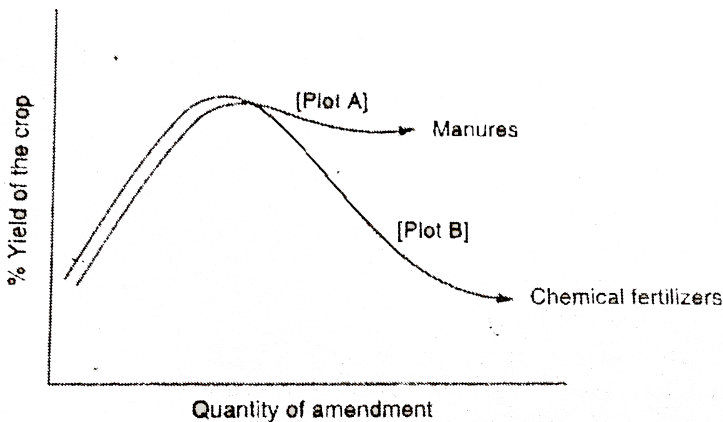


- (i) Why does plot B shows sudden increase and then gradual decrease in yield ?
- (ii) Why is the highest peak in plot A graph slightly delayed?
- (iii) What is the reason for the different pattern of the two graphs.



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2. The figure shows two crop fields (plots A and B) have been treated by manures and chemical fertilizers, respectively, keeping other environment factors same. Observe the graph and answer the following question:



(i) Why does plot B shows sudden increase

and then gradual decrease in yield ?

(ii) Why is the highest peak in plot A graph slightly delayed?

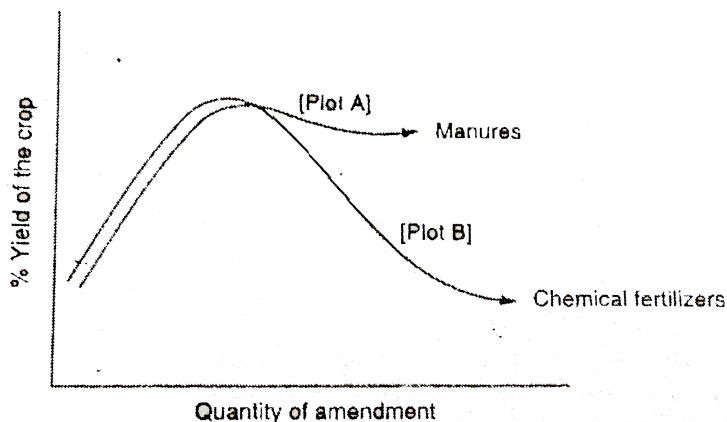
(iii) What is the reason for the different pattern of the two graphs.



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**3.** The figure shows two crop fields (plots A and B) have been treated by manures and chemical fertilizers, respectively, keeping other environment factors same. Observe the graph

and answer the following question:



(i) Why does plot B shows 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.



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4. Which of the following conditions will give most benefits? Why?

(a) Farmers use high quality seeds, do not adopt irrigation or use fertilizers.

(b) Farmers use ordinary seeds, adopt irrigation or use fertilizers.

(c ) Farmers use quality seeds, adopt irrigation, use fertilizers and use crop protection measures?



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5. Suggest the correct reason for the following:

A farmer was advised not to use a particular type of fertiliser for his crop after harvesting a crop of peas. Give one reason for such an advice. Name any two crops other than the pea crop which might have shown the same effect.



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6. Match the following:

Column A	Column B
(a) Insecticide	(i) Bordeaux mixture
(b) Rodenticide	(ii) Aureomycin
(c) Fungicide	(iii) Endosulfan
(d) Bactericide	(iv) Thallium sulphate
	(v) Atrazine



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7. Match the following with one or more than one correct answer:

Column A	Column B
(a) Cauliflower and spinach	(i) Biennial crop
(b) Carrot and turnip	(ii) Annual crop
(c) Macroelement	(iii) Required in quantities less than 01 mg/g of dry matter
(d) Microelement	(iv) Magnesium and sulphur
(e) Fungal disease of the plant	(v) Blast of rice
(f) Air-borne disease	(vi) Smut of bajra (vii) Ergot of bajra (viii) Required in quantities more than 10 mg/g of dry matter



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## Consolidated Exercise Mcq

1. Living organisms are used in

A. Organic Manure

B. Biofertilizers

C. Natural insecticide

D. Pesticides

**Answer: B**



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**2. The principal cereal crop of India is**

A. Wheat

B. Rice

C. Maize

D. Sorghum

**Answer: B**



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**3. Ground bug is a pest of**

A. Sugarcane

B. Cotton

C. Rice

D. Wheat

**Answer: C**



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**4. Paras is a variety of**

A. Sunflower

B. Soyabean

C. Wheat

D. Groundnut

**Answer: A**



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**5. Which of the following have been artificially selected?**

A. Cabbage

B. Cauliflower

C. Broccoli

D. All of these

**Answer: D**



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6. Kranti, Pusa agarni and pusa bold are improved varieties of

A. Urad bean

B. Sunflower

C. Chick pea

D. Mustard

**Answer: D**



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7. Aasha is a variety of

A. Moong bean

B. Urad bean

C. Pigeon pea

D. Gram



**Answer: A**



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**8. Which of the following is a micronutrient?**

A. Nitrogen

B. Phosphorus

C. Potassium

D. Boron

**Answer: D**



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9. Which of the following is broad leaf weed ?

A. Chenopodium

B. Convanelus

C. Amaranthus

D. All of the above

**Answer: D**



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10. Which of the following is natural insecticides?

A. Nicotine

B. Neem

C. Pyrethrum

D. All of these

**Answer: D**



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11. Navjot is a variety of

A. Wheat

B. Maize

C. Paddy

D. Gram

**Answer: B**



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12. Nodules with nitrogen fixing bacteria are present in

A. Mustard

B. Wheat

C. Gram

D. Cotton

**Answer: C**



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13. Plants can be made disease-resistant by

A. Heat treatment

B. Hormone treatment

C. Colchicine treatment

D. Breeding with their wild relatives

**Answer: D**



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14. Sharbati Sonora' is a:

A. Wheat

B. Rice

C. Gram

D. Maize

**Answer: A**



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**15.** Which of the following is incorrect for green manure?

A. It supplies organic matter

B. It supplies nitrogen

C. It prevents soil erosion

D. It allows leaching

**Answer: D**



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**16.** Place of keeping and studying dry plants is

A. Arboretum



B. Vasculum

C. Herbarium

D. Museum

**Answer: C**



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**17. Organic farming does not include**

A. Green manure

B. Chemical fertilizers

C. Crop rotation

D. Compost and farmyard manures

**Answer: B**



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**18.** Growing two or more crops in definite row pattern is

A. mixed farming

B. mixed cropping

C. inter cropping

D. crop rotation

**Answer: C**



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**19.** The technique used to obtain variety with high yield and other desirable characters is

A. Introduction

B. Selection

C. Hybridization

D. Both A and B

**Answer: C**



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**20.** Pusa Lerma is an improved variety of

A. Rice

B. Wheat

C. Maize

D. Soyabean

**Answer: B**



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**21.** The common bio-fertilizers used in organic farming are

A. Margosa

B. Pyrethrum

C. Green manure

D. Nitrogen fixing bacteria and cyanobacteria

**Answer: D**



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**22. Weeds affect the crop plants by**

- A. killing of plants in field before they grow
- B. dominating over the crop plants

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

D. helping the crops to get proper nutrients

**Answer: A::B::C::D**



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**23. Amsacta albistriga is/are a pest of**

A. rice

B. mustard

C. wheat

D. groundnut

**Answer: D**



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**24. Mention one advantage of crop rotation.**

A. Increased yield



B. Conservation of soil productivity

C. Weed control

D. Fulfillment of house need

**Answer: A::B::C::D**



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**25.** In a practice known as crop rotation, farmers alternate a crop of legumes (plants whose roots bear nodules containing

Rhizobium) with a crop of non-legumes. What is/are the benefit of this practice?

A. Rhizobium fixes nitrogen and the fixed nitrogen will increase the fertility of the soil.

B. It prevents the farmer from being exposed to the same crop pathogens year after year.

C. It keeps the plants from becoming pesticide resistant.

D. It keeps those bacteria that are plant pathogens from becoming pesticide resistant.

**Answer: A::B::D**



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**26.** Find the correct match.

A. Ladyfinger - Pusa savani

B. Rice - Hira Moti

C. Maize - Ganga 5

D. Sunflower - Durga

**Answer: A::C::D**



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**27.** Which of the following crops would require a minimum quantity of NPK or urea for their proper growth?

A. Paddy

B. Peas

C. Wheat

D. ground nut

**Answer: A::B::D**



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## Olympiad And Ntse Level Exercises

1. Meaning of prefix Bt in Bt-cotton is

A. 'Boron-treated' cotton seeds

B. 'Bigger thread' variety of cotton with better tensile strength

C. Biotechnology production using restriction enzymes and ligases

D. Carrying an endotoxin gene from *Bacillus Thuringiensis*

**Answer: D**



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2. Most common pesticides used in the crops are

A. BHC, aldrin, malathion, pyrethrin

B. Aldrin, malathion, lead arsenate, sodium fluoride

C. Aldrin, malathion, sodium arsenate, lead arsenate

D. Cryolite, aldrin, pyrethrin

**Answer: B**





**3. Assertion:** Increase in ozone concentration near the earth's surface reduces crop yields.

**Reason:** Increase in ozone concentration in stratosphere protects us.

Select the correct options from the following.

A. Assertion is True, Reason is True, Reason is a correct explanation for Assertion.

B. Assertion is True, Reason is True, Reason is NOT a correct explanation for



Assertion.

C. Assertion is True, Reason is False.

D. Assertion is False, Reason is True.

**Answer: B**



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4. Identify the correct option from the following.

**Column I**

- (a) Micronutrient
- (b) Kharif crop
- (c) Rabi crop
- (d) *Apis mellifera*

**Column II**

- (p) Soyabean
- (q) Bee
- (r) Wheat
- (s) Molybdenum

- A. (a)-s, (b)-p, ( c)-r, (d)-q
- B. (a)-r, (b)-s, ( c)-q, (d)-p
- C. (a)-r, (b)-p, ( c)-s, (d)-q
- D. (a)-s, (b)-p, ( c)-q, (d)-r

**Answer: A**



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5. Which of the following is not a natural insecticide?

A. Nicotine

B. Neem

C. Metasystox

D. Pyrethrum

**Answer: C**



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6. The drawback of green revolution can be best represented by the statement:

A. Use of agrochemicals was an expensive measure for Indian farmers.

B. More requirement of water by high-yielding crops resulted in the depletion of underground water resources.

C. Excessive use of chemical fertilizers, pesticides, etc. resulted in air, soil and

water pollution.

D. All of these

**Answer: D**



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7. Which among the following matching is false?

A. Green revolution-Revolution in the increase of food grains (especially

wheat)

B. White revolution-Revolution in the increase of milk

C. Blue revolution-Revolution in poultry production

D. Yellow revolution - Revolution in production of oil seeds.

**Answer: C**



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8. Which among the following are steps of tissue culture?

A. Removal of tissues from parent organism.

B. Inoculation of explant (excised tissue) in suitable culture medium.

C. Incubation of excised tissues in conducive environment.

D. All of the above

**Answer: D**



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9. In high yielding 'hybrid crop varieties' to exploit hybrid vigour, the farmers need to purchase fresh hybrid seed every year, because

A. they are not allowed to grow their own seed

B. the hybrid vigour is lost due to inbreeding depression



C. the government of India has accepted

Dunkel's proposals

D. it is cheaper to purchase fresh seed

**Answer: B**



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**10. Which of the following is a micronutrient?**

A. Nitrogen

B. Manganese

C. Boron

D. Calcium

**Answer: B::C**



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## Challenging Exercise

1. Some crops take less time to mature, while others take longer. Which is more beneficial to the farmers and why?



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2. Proper storage of grains is very important. Preventive and control measures must be used before grains are stored for future use. How can we judge the good quality of grains as consumers?



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3. Organic agriculture is a production system that sustains the health of soils, ecosystems, and people. How?



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4. What are some ways agriculture is changing to reduce the use of pesticides and their danger to workers, as well as to protect the land?



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