



# BIOLOGY

## BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)

### PLANT BREEDING

#### Textual Questions Solved

**1. Assertion (A):** Genetic variation provides the raw material for selection.

Reason (R): Genetic variations are differences in genotypes of the individuals.

- A. Assertion is right an reason is wrong
- B. Assertion is wrong and reason is right
- C. Both reason and assertion is right
- D. Both reason and assertion is wrong

**Answer: C**



**Watch Video Solution**

2. While studying the history of domestication of various cultivated plants were recognized earlier.



[Watch Video Solution](#)

3. Pick out the odd pair.

A. Mass selection - Morphological characters

B. Purline selection - Repeated self  
pollination

C. Clonal selection - sexually propagated

D. Natural selection - Involves nature

**Answer: A**



**Watch Video Solution**

#### 4. Match Column I with Column II:

**Column I**

- (i) William S. Gaud
- (ii) Shull
- (iii) Cotton Mather
- (iv) Muller and Stadler

**Column II**

- (I) Heterosis
- (II) Mutation breeding
- (III) Green revolution
- (IV) Natural hybridization

A. i-I, ii-II, iii-III, iv-IV

B. i-III, ii-I, iii-IV, iv-II

C. i-IV, ii-II, iii-I, iv-IV

D. i-II, ii-IV, iii-III, iv-I

**Answer: B**



**Watch Video Solution**

5. The quickest method of plant breeding is

A. (a) Introduction

B. (b) Selection

C. (c) Hybridization

D. (d) Mutation breeding

**Answer: D**



**Watch Video Solution**

6. Desired improved variety of economically useful crops are raised by.....

A. natural selection

B. hybridization

C. mutation

D. biofertilisers

**Answer: B**



**Watch Video Solution**

7. Plants having similar genotypes produced by plant breeding are called

- A. (a) clone
- B. (b) haploid
- C. (c) autopolyploid
- D. (d) genome

**Answer: A**



**Watch Video Solution**



8. Importing better varieties and plants from outside and acclimatising them to local environment is called

- A. (a) cloning
- B. (b) heterosis
- C. (c) selection
- D. (d) introduction

**Answer: D**



**Watch Video Solution**

9. Dwarfing gene of wheat is

A. (a) pal 1

B. (b) Atomita 1

C. (c) Norin 10

D. (d) pelita 2

**Answer: C**



**Watch Video Solution**

**10.** Crosses between the plants of the same variety is called

- A. (a) Interspecific
- B. (b) intervarietal
- C. (c) intravarietal
- D. (d) intergeneric

**Answer: C**



**Watch Video Solution**

11. Progeny obtained as a result of repeat self pollination of a cross pollinated crop is called

- A. (a) pure line
- B. (b) pedigree line
- C. (c) inbreed line
- D. (d) heterosis

**Answer: A**



**Watch Video Solution**

12. Jaya and ratna are the semi dwarf varieties of

- A. (a) wheat
- B. (b) rice
- C. (c) cowpea
- D. (d) mustard

**Answer: B**



**Watch Video Solution**

**13.** Which one of the following are the species that are crossed to give sugarcane varieties with high sugar, high yield, thick stems and ability to grow in the sugarcane belt of North India?

A. a) *Saccharum robustum* and *Saccharum officinarum*

B. b) *Saccharum barberi* and *Saccharum officinarum*

C. c) *Saccharum sinense* and *Saccharum officinarum*

D. d) *Saccharum barberi* and *Saccharum robustum*

**Answer: B**



**Watch Video Solution**

**14.** Match column I (crop) column II (Corrsponding disease resistant variety) and select the correct option from the given codes.

**Column I**

(I) Cowpea

(II) Wheat

(III) Chilli

(IV) Brassica

**Column II**

(i) Himgiri

(ii) Pusa komal

(iii) Pusa Sadabahar

(iv) Pusa Swarnim

A. (a) I-iv, II-iii, III-ii, IV-i

B. (b) I-ii, II-I, III-iii, IV-iv

C. (c) I-ii, II-iv, III-I, IV-iii

D. (d) I-I, II-iii, III-iv, IV-ii

**Answer: B**



**Watch Video Solution**

**15.** A wheat variety, Atlas 66 which has been used as a donor for improving cultivated wheat, which is rich in



A. (a) iron

B. (b) carbonhydrates

C. (c) proteins

D. (d) vitamins

**Answer: C**



**Watch Video Solution**

**16.** Which one of the following crop varieties correct matches with its resistance to disease?

**Variety**

(a) Pusa Komal

(b) Pusa Sadabahar

(c) Pusa Shubhra

(d) Brassica

**Resistance to disease**

Bacterial blight

White rust

Chilli mosaic virus

Pusa swarnim



**Watch Video Solution**

**17.** Which of the following is incorrectly paired?

A. Wheat - Himgiri

B. Milch breed - sahiwal

C. Rice - Ratna

D. Pusa Komal - Brassica

**Answer: D**



**Watch Video Solution**

**18. Match list I with list II:**

**List I**

**Biofertilizer**

(i) Free living N<sub>2</sub>

(ii) Symbiotic N<sub>2</sub>

(iii) P Solubilizing

(iv) P Mobilizing

**List II**

**Organisms**

(a) *Aspergillus*

(b) *Amanita*

(c) *Anabaena azollae*

(d) *Azotobacter*

A. i-c, ii-a, iii-b, iv-d

B. i-d, ii-c, iii-a, iv-b

C. i-a, ii-c, iii-b, iv-d

D. i-b, ii-a, iii-d, iv-c

**Answer: B**



**Watch Video Solution**

**19.** Distinguish between primary production and secondary production



**Watch Video Solution**

**20.** How are microbial inoculants used to increase the soil fertility?



**Watch Video Solution**

**21.** What are the different types of hybridization?



**Watch Video Solution**

**22.** Explain the best suited type of breeding followed by plant breeders at present?



**Watch Video Solution**

**23.** Write a note on heterosis.



**Watch Video Solution**

**24.** List out the new breeding techniques involved in developing new traits in plant

breeding .



**Watch Video Solution**

## **Additional Questions 1 Mark Questions**

1. .... is the process of bringing a plant species under human control.

A. (a) Emasculation

B. (b) Hybridization

C. (c) Domestication

D. (d) Acclimatization

**Answer: C**



**Watch Video Solution**

2. Which of the following scientist developed world's first cotton hybrid?

A. a) Dr. B.P.Pal

B. b) C.T.Patel

C. c) Dr.K.Ramiah



D. d) N.G.P.Rao

**Answer: B**



**Watch Video Solution**

**3. Identify the correct statement**

A. Bio-inoculants are efficient in

solubilising phosphate

B. Bio-inoculants are ecofriendly organic

agro outputs

C. Bio-inoculants are obtained from dead organics matters

D. Bio-inoculants are designed to improve soil fertility

**Answer: C**



**Watch Video Solution**

**4. Which is a free living nitrogen fixing fungi ?**

A. Azotobacter

B. Clostridium

C. Nostoc

D. Anabaena

**Answer: D**



**Watch Video Solution**

5. Arbuscular mycorrhizae is a symbiotic association between .....

A. a) Algae and fungi

B. b) Angiosperm roots and fungi

C. c) Blue green algae and Azolla fern

D. d) Cyanobacteria and corolloid root

**Answer: B**



**Watch Video Solution**

**6. Azolla is best suited biofertilizer for ..... .**

A. Sugar cane cultivation

B. Paddy cultivation

C. Wheat cultivation

D. Cotton cultivation

**Answer: B**



**Watch Video Solution**

7. Assertion (A): SLF promotes vigorous growth and provide resistance against diseases.

Reason (R): SLF is made from kelp containing more then 70 minerals.

A. (A) Both A and R are true. R explains A.

B. (B) A is true R is false

C. (c) A is false R is true

D. (d) Both A and R is false

**Answer: A**



**Watch Video Solution**

**8. Assertion (A):** Pure line varieties show homozygosity. **Reason (R):** Pure line species are obtained through cross pollination.

A. (a) Both A and R are true. R explains A.

B. (b) A is true R is false

C. (c) A is false R is true

D. (d) Both A and R is false

**Answer: B**



**Watch Video Solution**

9. Assertion (A): Hybrids show increased growth and elevated yield. Reason (R):  $F_1$  hybrids show Heterosis.

A. Both A and R are true. R explains A.

B. A is true R is false

C. A is false R is true

D. Both A and R is false

**Answer: A**



**Watch Video Solution**

**10.** Statement (1): Trichoderma species is a free-living bacteria. Statement (2): It acts as a potent bio-control agent



A. a) Statement 1 is correct and Statement 2 is incorrect

B. b) Statement 1 is incorrect and Statement 2 is correct

C. c) Both statements are correct

D. d) Both statements are incorrect

**Answer: B**



**Watch Video Solution**

**11.** Statement (1): Clones selection is carried out in asexually propagating plants.

Statement (2): Clones show similar genotypes

A. (a) Statement 1 is correct and Statement 2 is incorrect

B. (b) Statement 1 is incorrect and Statement 2 is correct

C. (c) Both statements are correct

D. (d) Both statements are incorrect

**Answer: C**



**Watch Video Solution**

**12.** The process of removal of anthers from the flower is called .....



**Watch Video Solution**

**13.** Identify the proper sequence.

A. Emasculation to Selection to Bagging to  
Crossing to Harvesting

B. Harvesting to Selection to Crossing to  
Emasculation to Bagging

C. Selection to Harvesting to Crossing to  
Emasculation to Bagging

D. Selection to Emasculation to Bagging to  
Crossing to Harvesting

**Answer: D**



**Watch Video Solution**

14. Intra specific hybridization is also termed as .....

- A. a) Intravarietal hybridization
- B. b) intervarietal hybridization
- C. c) Interspecific hybridization
- D. d) intergeneric hybridization

**Answer: B**



**Watch Video Solution**

15. The period of opening of a flower is ..... .



[Watch Video Solution](#)

16. Superiority of hybrids over parents only in vegetative growth not in yield. This phenomenon is termed as ..... .

A. Euheterosis

B. Balanced euheterosis

C. Luxuriance

D. Mutational heterosis

**Answer: C**



**Watch Video Solution**

**17.** The term green revolution was coined by

..... .

A. a) William S Gaud

B. b) M.S Swaminathan

C. c) Dr. B.P. Pal

D. d) Dr. N.E.Borlaug

**Answer: A**



**Watch Video Solution**

**18.** Which is the second gamma garden in India?



**Watch Video Solution**



## 19. Match the following:

### Column I

- (A) Dwarf Wheat
- (B) Saline resistant rice
- (C) Okra / Bindhi
- (D) Cow pea

### Column II

- (i) Atomita - 2
- (ii) Norin 10
- (iii) Pusa Komal
- (iv) Pusa A - 4

A. A-ii, B-i, C-iv, D-iii

B. A-iii, B-iv, C-ii, D-i

C. A-i, B-iii, C-iv, D-iii

D. A-ii, B-iiii, C-I, D-iv

**Answer: A**



**Watch Video Solution**

20. Who is popularly called as the "father of green revolution in India"?

A. Nel Jeyaraman

B. Dr. M.S Swaminathan

C. Dr. Nammalvar

D. N.G.P.Rao

**Answer: B**



**Watch Video Solution**

21. Pusa swarnim variety of Brassica species show resistance to .....

A. White rust

B. Leaf curl

C. Black rot

D. Hill bunt

**Answer: A**



**Watch Video Solution**

22. The first established Atomic Garden in India was .....

A. (a) Bhabha Atomic Research Institute

B. (b) Indira Gandhi centre for Atomic Research

C. (c) Indian Agricultural Research Institute

D. (d) Bose Research Institute

**Answer: D**



**Watch Video Solution**

23. Triticale is polyploid breed of .....

A. a) *Triticum cereale* x *Secale sativus*

B. b) *Triticum durum* x *Secale cereale*

C. c) *Triticum cereale* x *Secale sativus*

D. d) *Triticum sativus* x *Secale cereale*

**Answer: B**



**Watch Video Solution**

24. Raphanobrassica is an example for .....

A. (a) Autopolyploid

B. (b) Allopolyploid

C. (c) Polyploid

D. (d) Polysomy

**Answer: B**



**Watch Video Solution**

25. Atlas 66 is a improved variety of ..... .

A. Rice

B. Maize

C. Wheat

D. Spinach

**Answer: C**



**Watch Video Solution**

26. Pusa sawani variety of okra is resistance against .....

A. Aphids

B. Fruit borers

C. Shoot and fruit borers

D. Jessids

**Answer: C**



**Watch Video Solution**



27. .... was the first person to develop world's first hybrid of sorghum



**Watch Video Solution**

**28.** Identify the incorrect statement:

- (i) SLF is obtained from kelps - a brown algae.
- (ii) Azolla is a fern.
- (iii) Rhizobium is found in association with root nodules.
- (iv) AM forms symbiotic relation with angiospermic roots.

A. I only

B. ii,iii and iv only

C. none of the above

D. all the above

**Answer: C**



**Watch Video Solution**

**29. Damping off of tomato is controlled by .....**

.

A. (a) *Beauveria* species

B. (b) *Trichoderma* species

C. (c) *Acacia* species

D. (d) *Pseudomonas* species

**Answer: A**



**Watch Video Solution**

**30. Match the following :**

Column I

- (A) Free living  $N_2$  fixing biofertilizer
- (B) Associative symbiotic  $N_2$  fixing biofertilizer
- (C) Phosphate solubilizing biofertilizer
- (D) Phosphate mobilizing biofertilizer

Column II

- (i) *Aspergillus*
- (ii) *Clostridium*
- (iii) *Amantia*
- (iv) *Azospirillum*

A. A-ii, B-iv, C-i, D-iii

B. A-iii, B-iv, C-ii, D-i

C. A-I, B-iii, C-ii, D-iv

D. A-ii, B-iii, C-I, D-iv

**Answer: A**



**Watch Video Solution**

**31. Identify the correct symbiotic association**

A. Rhizobium x Corolloid roots

B. Arbuscular Mycorrhizae x Angiospermic roots

C. Azolla x Amantia

D. Azospirillum x Azolla

**Answer: B**



**Watch Video Solution**

**32.** Atomita 2 - rice is a product by .....

A. Polyploid breeding

B. Hybridization

C. Mutation breeding

D. Clonal selection

**Answer: C**



**Watch Video Solution**

**33.** Luxuriance is the term used on par with

..... .

A. (a) Heterosis

B. (b) Anthesis

C. (c) Hybrids

D. (d) Mutant breeds

**Answer: A**



**Watch Video Solution**

**34.** The term pureline was coined by .....



**Watch Video Solution**

## Additional Questions 2 Mark Questions

1. What is domestication of plants?



[Watch Video Solution](#)

2. Mention any two free - living nitrogen fixing bacteria.



[Watch Video Solution](#)



3. What are bio-pesticides? Why they are considered better than synthetic pesticides?



[Watch Video Solution](#)

4. Name any four plants used in Green leaf manuring.



[Watch Video Solution](#)

5. List out the objectives of plant breeding.



**Watch Video Solution**

**6. Define acclimatization.**



**Watch Video Solution**

**7. Who coined the term "pureline"? Define it.**



**Watch Video Solution**

**8.** Define the following terms.

(a) Emasculation      (b) Bagging      (c )

Biofortification



**Watch Video Solution**

**9.** What is heterosis?



**Watch Video Solution**

**10.** What does the term 'luxuriance' stands for the plants breeding? Explain.



**Watch Video Solution**

**11.** Mutagens are the substances that induces mutation. Name any two physical and chemical mutagens.



**Watch Video Solution**

**12.** Write in brief about Atomic Garden.



**Watch Video Solution**

**13.** State any one advantage and one disadvantage of polyploid breeding.



**Watch Video Solution**

**14.** What are polyploids ? Mention its nature.



**Watch Video Solution**

**15.** Name any two allopolyploid plant species.



**Watch Video Solution**

**16.** What is biofortification?



**Watch Video Solution**

**17.** Name the insect resistance varieties developed in the following crops. (1) Okra (2)

## Rapeseed mustard



[Watch Video Solution](#)

**18.** In which plant, and by whom the first natural hybridization was performed?



[Watch Video Solution](#)

**Additional Questions 3 Mark Questions**

1. In 1926, Vavilov initially proposed eight main geographic centres of crop origin. Mention any six of them.



[Watch Video Solution](#)

2. Name any three eminent plant breeders of Indian origin.



[Watch Video Solution](#)



**3.** How Rhizobium acts as a efficient bio - fertilizer?



**Watch Video Solution**

**4.** Azolla increases the yield of paddy crop - support your answer.



**Watch Video Solution**

5. Mention any tree advantage of Arbuscular mycorrhizal association.



[Watch Video Solution](#)

6. What makes the Trichoderma an effective bio-pesticide?



[Watch Video Solution](#)

7. Write a note on Green manuring.



[Watch Video Solution](#)

**8.** List out the objectives of plant breeding.



[Watch Video Solution](#)

**9.** Give an account on clonal selection.



[Watch Video Solution](#)

**10.** Write a short note on autopolyploidy with an example .



**Watch Video Solution**

## **Additional Questions 5 Mark Questions**

**1.** Give a comparative account on Seaweed liquid fertilizer.



**Watch Video Solution**

2. Explain the steps involved in hybridization.



[Watch Video Solution](#)

## Higher Order Thinking Skills Hots Questions

1. Given below are the examples of symbiotic association in which one partner was mentioned . Write the name of the mutual co-partner.

(a) Azolla fern +..... .

(b) Root nodules of legume plants +..... .

(c) Phycomycetous fungi +..... .



**Watch Video Solution**

**2.** Provide an example for each of the following agricultural components.

(i) Bio pesticide

(ii) Green manure crop

(iii) bio-Fertilizer



**Watch Video Solution**

3. State the objective of using green manuring.



[Watch Video Solution](#)

4. Why plant Breeding is carried out by farmers and scientists?



[Watch Video Solution](#)

5. Yesterday, Ramu visited his friend's Orchard, where in he noticed few flowers of certain

guava trees are covered using thin paper bags.

(i) Name the process carried out there.

(ii) Why it was done so?



[Watch Video Solution](#)

**6. Who am I?**

(i) Father of green Revolution.

(ii) Father of Indian Green Revolution.



[Watch Video Solution](#)



7. A plant breeder developed a hybrid sugarcane by grafting two different varieties with desirable characters. The resultant hybrid showed excellent growth and productivity with increased sucrose content compared to its parental forms.

(i) What does this phenomenon refer to?

(ii) How its condition can be maintained through further generation?



**Watch Video Solution**