



BIOLOGY

BOOKS - PREMIERS PUBLISHERS

BREEDING AND BIOTECHNOLOGY

Textbook Evaluation Choose The Correct Answer

1. Which method of crop improvement can be practised by a farmer if he is in experienced?

A. clonal selection

B. mass selection

C. pureline selection

D. hybridisation

Answer: B



Watch Video Solution

2. Pusa komal is a disease resistant variety of _____

A. sugarcane

B. rice

C. cow pea

D. maize

Answer: C



Watch Video Solution

3. Himagiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of ____

A. chilli

B. maize

C. sugarcane

D. wheat

Answer: D



Watch Video Solution

4. The miracle rice which saved millions of lives and celebrated its 50th birthday is

A. IR 8

B. IR 24

C. Atomia 2

D. Ponni

Answer: A



Watch Video Solution

5. Which of the following is used to produce products useful to humans by biotechnology techniques?

A. enzyme from organism

B. live organism

C. vitamins

D. both (a) and (b)

Answer: A



Watch Video Solution

6. We can cut the DNA with the help of _____.

A. scissors

B. restriction endonucleases

C. knife

D. RNAase

Answer: B



Watch Video Solution

7. rDNA is a __

A. vector DNA

B. circular DNA

C. recombinant of vector DNA and

desired DNA

D. satellite DNA

Answer: C



Watch Video Solution

8. Dna fingerprinting is based on the principle of identifying ___ sequences of DNA

A. single stranded

B. mutated

C. polymorphic

D. repetitive

Answer: D



Watch Video Solution

9. Organisms with modified endogenous gene of a foreign gene are also known as_____.

A. transgenic organisms

B. genetically modified

C. mutated

D. both (a) and (b)

Answer: A



Watch Video Solution

10. In a hexaploid wheat ($2n=6x=42$) the haploid (n) and the basic (x) number of chromosomes respectively are:-

A. $n=7$ and $x=21$

B. $n=21$ and $x=21$

C. $n=7$ and $x=7$

D. $n=21$ and $x=7$

Answer: D



Watch Video Solution

Textbook Evaluation Fill In The Blanks

1. Economically important crop plants with superior quality are raised by _____



Watch Video Solution

2. A protein rich wheat variety is _____



Watch Video Solution

3. _____ is the chemical used for doubling the chromosomes.



[Watch Video Solution](#)

4. The scientific process which produces crop plant enriched with desirable nutrients is called_____.



[Watch Video Solution](#)

5. Rice normally grows well in alluvial soil, but _____ is a rice variety produced by mutation breeding that grows well in saline soil





[Watch Video Solution](#)

6. _____ technique made it possible to genetically engineered living organism.



[Watch Video Solution](#)

7. Restriction endonucleases cut the DNA molecule at specific positions known as _____.



[Watch Video Solution](#)

8. Similar DNA finger printing is obtained for



[Watch Video Solution](#)

9. cells are undifferentiated mass of cells.



[Watch Video Solution](#)

10. In gene cloning, the DNA of interest is integrated into a _____.



[Watch Video Solution](#)

Textbook Evaluation State Whether True Or False If False Write The Correct Statement

1. Raphano brassica is a man-made tetraploid produced by colchicine treatment.



[Watch Video Solution](#)

2. The process of producing an organism with more than two sets of chromosome is called mutation.



[Watch Video Solution](#)

3. A group of plants produced from a single plant through vegetative or asexual reproduction are called a pureline.



[Watch Video Solution](#)

4. Iron fortified rice variety determines the protein quality to the cultivated plant.



[Watch Video Solution](#)

5. Golden rice is a hybrid.



[Watch Video Solution](#)

6. Bt gene from bacteria can kill insects.



[Watch Video Solution](#)

7. In vitro fertilisation means the fertilisation done inside the body.



[Watch Video Solution](#)

8. DNA fingerprinting technique was developed by Alec Jeffrey.



[Watch Video Solution](#)

9. Molecular scissors refers to DNA ligases.



[Watch Video Solution](#)

10. Match the following :

Column I		Column II	
A	Sonalika	(i)	Phaseolus mungo
B	IR 8	(ii)	Sugarcane
C	Saccharum	(iii)	Semi-dwarf wheat
D	Mung No. 1	(iv)	Ground nut
E	TMU – 2	(v)	Semi-dwarf Rice
F	Insulin	(vi)	Bacillus thuringiensis
G	Bt toxin	(vii)	Beta carotene
H	Golden rice	(viii)	First hormone produced using rDNA technique



[Watch Video Solution](#)

Textbook Evaluation Understand The Assertion Statement Justify The Reason Given And Choose The Correct Choice

1. Assertion: Hybrid is superior than either of its parents.

Reason: hybrid vigour is lost inbreeding.

A. Assertion is correct and reason is wrong.

B. Reason is correct and the assertion is wrong.

C. Both assertion and reason is correct.

D. Both assertion and reason is wrong.

Answer: C





2. Assertion: Colchicine reduces the chromosome number.

Reason: It promotes the movement of sister chromatids to the opposite poles.

A. Assertion is correct and reason is wrong.

B. Reason is correct and the assertion is wrong.

C. Both assertion and reason is correct.

D. Both assertion and reason is wrong.

Answer: D



Watch Video Solution

3. Assertion(A): rDNA is superior over hybridisation techniques.

Reason(R): Desired genes are inserted without introducing the undesirable genes in target organisms.

A. Assertion is correct and reason is wrong.

B. Reason is correct and the assertion is wrong.

C. Both assertion and reason is correct.

D. Both assertion and reason is wrong.

Answer: A



Watch Video Solution

Textbook Evaluation Answer In A Sentence

1. Give the name of wheat variety having higher dietary fibre and protein.



[Watch Video Solution](#)

2. Semi-dwarf varieties were introduced in rice. This was made possible by the presence of dwarfing gene in rice. Name this dwarfing gene.



[Watch Video Solution](#)

3. Define Genetic engineering.



Watch Video Solution

4. Name the types of stem cells.



Watch Video Solution

5. What are transgenic organisms?



Watch Video Solution

6. State the importance of biofertilizer.



Watch Video Solution

Textbook Evaluation Short Answers Questions

1. Discuss the method of breeding for disease resistance.



Watch Video Solution

2. Name three improved characteristics of wheat that helped India to achieve high productivity.



[Watch Video Solution](#)

3. Name two maize hybrids rich in amino acid lysine.



[Watch Video Solution](#)

4. Differentiate between Somatic cell gene therapy and Germline gene therapy.



[Watch Video Solution](#)

5. Distinguish between undifferentiated cells and differentiated cells.



[Watch Video Solution](#)

6. State the application of DNA finger printing technique.



[Watch Video Solution](#)

7. How are stem cells useful in regenerative process ?



[Watch Video Solution](#)

8. Differentiate between outbreeding and inbreeding.



[Watch Video Solution](#)

Textbook Evaluation Long Answers Questions

1. What are the effects of hybrid vigour in animals?



[Watch Video Solution](#)

2. Describe mutation breeding with an example.



Watch Video Solution

3. Biofortification may help in removing hidden hunger .How?



Watch Video Solution

4. With a neat labelled diagram explain the techniques involved in gene cloning.



Watch Video Solution

5. Discuss the importance of biotechnology in the field of medicine.



Watch Video Solution

1. A breeder wishes to incorporate desirable characters into the crop plants. Prepare a list of characters he will incorporate.



[Watch Video Solution](#)

2. Organic farming is better than green Revolution. Give reasons



[Watch Video Solution](#)

3. Polyoloidy are characterised by gigantism
justify your answer.

 [Watch Video Solution](#)

4. P' is a gene required for the synthesis of
vitamin A.It is intergrated with gemone of 'Q'
to produce genetically modified plant 'R'

(i)What is P,Q and R? .

(ii)state the importance of 'R' in India.

 [Watch Video Solution](#)

5. P' is a gene required for the synthesis of vitamin A. It is integrated with genome of 'Q' to produce genetically modified plant 'R'

(i) What is P, Q and R? .

(ii) state the importance of 'R' in India.



[Watch Video Solution](#)

Other Important Questions Answer Choose The Correct Answer

1. Modern biotechnology consist :

A. Genetic engineering

B. Tissue culture

C. Gene cloning

D. All of the above

Answer: D



Watch Video Solution

2. First artificially synthesized hormone is :

A. Secretin

B. Insulin

C. Glucagon

D. Renin

Answer: B



Watch Video Solution

3. Transgenic animals has :

A. Foreign DNA in all its cell

B. Foreign RNA in all its cells

C. Foreign DNA in some of the cells

D. Both (b)and (c)

Answer: A



Watch Video Solution

4. *Bacillus thuringiensis* (Bt) strains have been used for designing novel.

A. Bio-metallogenical techniques.

B. Bio-insecticidal plants

C. Bio-mineralization

D. Bio-fertilizer

Answer: B



Watch Video Solution

5. A kind of Biotechnology involving manipulation of DNA is:

- A. DNA replication
- B. Denaturation
- C. Genetic Engineering
- D. Renaturation

Answer: C



Watch Video Solution

6. A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using:

- A. ECORI
- B. Taq polymerase
- C. Polymerase III
- D. Ligase

Answer: D



Watch Video Solution

7. Consumption of which one of the following foods can prevent the kind of blindness associated with vitamin-A deficiency?

A. Golden Rice

B. Bt-Brinjal

C. Flaver savr tomato

D. Canolla

Answer: A



Watch Video Solution

8. Restriction endonucleases are enzymes which

A. Remove nucleotides from the ends of the DNA molecules

B. Make cuts at specific positions within the DNA molecules

C. Recognise a specific nucleotide sequence for binding of DNA ligase.

D. Restrict the action of the enzyme DNA polymerase.

Answer: B



Watch Video Solution

9. _____ is father of "Indian Green Revolution"

A. Nammalvar

B. Dr Borloug

C. Dr M.S Swaminathan

D. Dr Sultan Ismail

Answer: C



Watch Video Solution

10. New lined of sheep developed in Punjab is :

A. Sahiwal

B. Hisardale

C. Triticale

D. Sharbati sonara

Answer: B



Watch Video Solution

Other Important Questions Answer Fill In The Blanks

1. Write the resultant animal when there is a cross between

Male donkey with female horse



Watch Video Solution

2. Is a DNA molecules found in the cytoplasm of bacterial cell.



[Watch Video Solution](#)

3. was the first cloned female sheep .



[Watch Video Solution](#)

4. Human insulin can be synthesized by using

.....



[Watch Video Solution](#)

5. In genetic engineering , a DNA segment is transferred to the host cell through



[Watch Video Solution](#)

6. Genetically identical individuals are



[Watch Video Solution](#)

7. Ligase is used for joining two



[Watch Video Solution](#)

8. Enzyme that cleaves nucleic acids within the polynucleotide chain is known as



[Watch Video Solution](#)

9. The bacterium used as biopesticide is



[Watch Video Solution](#)

10. A strain of golden rice contains high content of



[Watch Video Solution](#)

**Other Important Questions Answer State
Whether True Or False If False Write The Correct
Statement**

1. The structure used to transfer the piece of DNA attached to it into a host cell is vector.



[Watch Video Solution](#)

2. Restriction endonucleases are used to join the DNA fragments having sticky ends.



[Watch Video Solution](#)

3. The progeny of a single individual obtained by self breeding is clonal selection.



Watch Video Solution

4. The aim of _____ improvement is to develop improved crop varieties.



Watch Video Solution

5. International Rice Research institute (IRRI) is in Indonesia.



Watch Video Solution

Other Important Questions Answer Match The Following

1. Match the following ,

Column I		Column II	
A	Stem cells	(i)	Blood clotting
B	Haemophilia	(ii)	Cloned sheep
C	Dolly	(iii)	World war II
D	Gamma Garden	(iv)	Triticale
E	Hybridization	(v)	unspecialised mass of cell



Watch Video Solution

Other Important Questions Answer Understand
The Assertion Statement Justify The Reason
Given And Choose The Corret Choice

1. Assertion : *Bacillus thuringiensis* to toxic to many insects.

Reason : It inhibits ion transport in the mid gut.

A. Assertion is correct and reason is wrong.

B. Reason is correct and the assertion is wrong

C. Both assertion and reason is correct.

D. Both assertion and reason is wrong.

Answer: A



Watch Video Solution

2. Consider the following statements :

i. Recombinant DNA technology is popularly known as genetic engineering is a stream of

biotechnology which deals with the manipulation of genetic materials by man invitro

ii. pBR322 is the first artificial cloning vector developed in 1977 by Boliver and Rodriguez from E.coli plasmid.

iii. Restriction enzymes belong to a class of enzymes called nucleases . Choose that correct option regarding above statements

A. Assertion is correct and reason is wrong.

B. Reason is correct and the assertion is

wrong

C. Both assertion and reason is correct.

D. Both assertion and reason is wrong.

Answer: D



Watch Video Solution

Other Important Questions Answer Answer In A Word Or Sentence

1. Name two neuro degenerative disorders.



Watch Video Solution

2. Name any four chemical mutagens.



[Watch Video Solution](#)

3. "Plant Breeding"



[Watch Video Solution](#)

4. What is the aim of Animal husbandry ?



[Watch Video Solution](#)

5. What are exotic species?



[Watch Video Solution](#)

6. List the two main aspects of hybridization .



[Watch Video Solution](#)

7. What is heterosis?



[Watch Video Solution](#)

8. What are plasmids?



Watch Video Solution

9. What is transgene?



Watch Video Solution

10. Name the Research institute found by Nammalvar.



[Watch Video Solution](#)

[Other](#) [Important](#) [Questions](#) [Answer](#) [Short](#)
[Answers](#) [Questions](#)

1. List out the pest resistant varieties of crops.



[Watch Video Solution](#)

2. Write the role of polyploidy in crop improvement.



[Watch Video Solution](#)

3. Write notes on Gamma garden.



Watch Video Solution

4. Give two examples of cross breeding in animals.



Watch Video Solution

5. Mention the two important properties of stem cells.



[Watch Video Solution](#)

6. Illustrate hybridization with example.



[Watch Video Solution](#)

[Other Important Questions Answer Very Answer Question](#)

1. What are stem cells ? Explain its types.



Watch Video Solution

2. In what way trans organism are better?



Watch Video Solution

3. Describe the tools of recombinant DNA technology.



Watch Video Solution

4. Give the Schematic representation of Mass selection.



[Watch Video Solution](#)

Other Important Questions Answer Higher Order Thinking Skills

1. Although 'green revolution' increases the food production, it is not enough to feed growing population. This problem is

overcomed by 'X' crops.

What is "X"?



[Watch Video Solution](#)

2. Although 'green revolution' increases the food production, it is not enough to feed growing population. This probelm is overcomed by 'X' crops.

What is "X"?



[Watch Video Solution](#)

3. One of the applications of biotechnology is 'gene therapy' to treat a person born with a hereditary disease.

(i) What does "gene therapy " mean ?



[Watch Video Solution](#)

4. One of the applications of biotechnology is 'gene therapy' to treat a person born with a hereditary disease.

Mention the steps involved in gene therapy to treat this disease.



Watch Video Solution