BIOLOGY

BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)

BREEDING AND BIOTECHNOLOGY

Textual Evaluation Solved I 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. purchne selection

D. hybridisation

Answer: A

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2. Pusa komal is a disease resistant variety of___

A. sugarcane

B. rice

C. cow pea

D. maize

Answer: C

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

A. chili

B. maize

C. sugarcane

D. wheat

Answer: D

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

A. IR-S

B. IR-24

C. Atomita-2

D. Ponm

Answer: A

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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: D

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

A. scissors

B. restriction endonucleases

C. knite

D. RNAase

Answer: B

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7. DNA is

A. vector DNA

B. circular DNA

C. recombinant of vector DNA and desired DNA

D. satellite DNA

Answer: C

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8. Dna fingerprinting is based on the principle of ifentifying___sequences of DNA

A. single stranded

B. mutated

C. polymorphic

D. repetitive

Answer: D

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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

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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. 7 and $x = 7$

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

Answer: D

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Textual Evaluation Solved Ii Fill In The Blanks

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

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2. A protein rich wheat variety is _____

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

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

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5. Rice normally grows well in alluvial soil,but_____ia a rice variey produced by mutation breeding that grow well in saline soil

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

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

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8. Similar DNA finger printing is obtained for

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9. ..... cells are undifferentiated mass of cells.

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10. In gene cloning,the DNA of intrest is intergrated is a_____.

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Textual Evaluation Solved Iii State Whether True Or False If False Write The Correct Statement

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

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

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

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

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5. Golden rice is a hybrid.

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6. Bt gene from bacteria can kill insects.

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

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8. DNA fingerprinting technique was developed by Alec Jeffrey.

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9. Molecular scissors refers to DNA ligases.

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Textual Evaluation Solved Iv Match The Following

1.

	Column A		Column B
1	Sonalika	(a)	Phaseolus mungo
2	$IR-8$	(b)	Sugarcane
C	Saccharum	(c)	Semi-dwarf whea
4	Mung No.1	(d)	Graound nut
5	$TMV-2$	(e)	Semi-dwarf Rice
6	Insulin	(f)	Bacillus thuringienesis
7	Bt toxin	(g)	Beta carotene
8	golden rice	(h)	first hormone produced using rDNA technique

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Textual Evaluation Solved V Understand The Assertion Statement Justify The Reason Given And Choose The Correct Choice

1. Asseration :Hybrid is superior than either of its parents. Reasons : vigour is lost upon 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: A

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2. Assertion:Colchicine reduces the chromosome number.

Reason:It promotes the movment 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

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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: C

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Textual Evaluation Solved Vi Answer In A Sentence

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

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

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3. Define Genetic engineering.

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4. Name the types of stem cells.

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5. What are transgenic organisms?

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6. State the importance of biofertilizer.

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Textual Evaluation Solved Vii Short Answer Questions

1. Discuss the method of breeding for disease resistance.

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

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

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4. Distinguish between

(a)Somatic gene therapy and germ line gene therapy.

(b)Undifferentiated cells and differentiated cells.

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5. (a) State the applications of DNA finger printing technique.

(b) Describe the structure of spinal cord.

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6. How are stem cells useful in regenerative process ?

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7. Differentiate between outbreeding and inbreeding.

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Textual Evaluation Solved Viii Long Answer Questions

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

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2. Describe mutation breeding with an example.

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

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

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

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Textual Evaluation Solved Ix Higher Order Thinking Skills Hots

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

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

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3. Polyoloidy are characterised by gigantism justify your answer.

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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.

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Additional Questions I Fill In The Blanks

1. _____ is the art of developing economically important plants with superior quality.

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2. Plant diseases are caused by..... Like virsues, bacteria and fungi.

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3. ____ is the first man made cereal.

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4. The superiority of the hybrid obtained by cross breeding is called as _____

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5. The other name for genetic engineering is .....

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6. The organism which undergoes mutation is called a ..... And mutations are .....

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7. The replacement of defective Gene in germ cell (egg or sperm) is called ....

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8. Blood clotting factors are developed to treat.....

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9. Stem cells, which are undifferentiated or unspecialised mass of cells can be used for the treatment is called as.....

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10. ..... is used in the treatment of diabetes.

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Additional Questions Ii Match The Following

1.

1	Cow pea	(a)	Joining the DNA fragments
2	UV rays	(b)	New breed of sheep
3	Lady's finger	(c)	Bacterial blight
4	DNA ligase	(d)	Flat bean
5	Pusasem3	(e)	Pusa swani
6	Hissardale	(f)	Induce mutation

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Additional Questions Iii Write True Or False Statements Correct The False Statements

1. Modern Agricultural practices are activities came out to improve the plants.

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2. When breeding takes place between animals of the same breed, it is called outbreeding

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3. The process of introducing high yiciding Vanities of plants from one place to another is called a selection.

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4. Mutation is a sudden inheritable change in the nucleus sequence of DNA in a organism.

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5. A breed is a group of animals of common rain within a series which has certain characters, that are not found in other members of the same species.

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Additional Questions Iv Choose The Correct Answer

1. The high yielding rice variety from Indonesia and China are ....

A. Peta and DGWG

B. IR-8 and Gold rice

C. Hexaploid Triticale and Triticum durum

D. Sonalika and Kalyan sona

Answer: A

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2. Disease resistant variety of cauliflower.

A. Himgiri

B. Pusa Shubhra

C. Pusa Komal

D. IR-8

Answer: B

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3. The presence of this substance in bacteria can undergo replication independently along with chromosomal DNA .....

A. heritable

B. colchicine

C. mutation

D. plasmid

Answer: D

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4. The gamete cells, which have only one set of chromosomes is called .....

A. diploid

B. polyploid

C. triploid

D. haploid

Answer: D

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5. A group of plants produced from a single plant through vegetative or sexual reproduction is called .....

A. Transgenic

B. Hexaploid

C. clones

D. mutation

Answer: B

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Additional Questions V Answer The Following Briefly

1. What is green revolution? Who is the "Father of Green Revolution?

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2. What does the nutritional quality of crup depend on?

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3. What is Bio-fortification? Give any two examples

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4. An organism having more than two sets of chromosomes is called polyploit aded by physical pents such as heat or cold treatment, -

rays and chemical s like colchicine.

Achievements of polyploidy breeding.

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5. What is hybridiration? Explain the hybridiration experiment.

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6. Name the methods of plant breeding to develop high yielding varieties or crop improvement.

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7. Explain briefly about gene therapy.

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8. What were the important discoveries that led to the stepping stones of recombinant DNA technology?

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9. What does the modern agriculture include?

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10. What is the aim of crop improvement?

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11. (a) What are the two important properties of stem cells?

(b) Write a short note on two types of stem cells.

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12. What are bulk genomic DNA and satellite DNA?

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Additional Questions Vi Answer The Following In Detail

1. Explain the following methods of plant breeding for crop improvement.

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2. Explain with examples the inbreeding and outbreeding of animal breeding.

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3. Explain the DNA fingerprinting technology with an illustration.

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4. Write a detailed account of stem cells, types of stem cells and stem cell therapy.

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5. Explain genetically modified organisms (GMOS]

(b) With the help of a tabular column tabulate the genetically modified plants and animals, with the objectives, gene inserted and achievement.

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Additional Questions Vii Higher Order Thinking Skills Hots

1. Name the Indian scientist who is known for his leading role in India's green revolution.

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2. What is Gamma garden?

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3. Write the cross breeds of the following:

(a) Cross breed of fowls:

(b) Cross breed of cows:

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