



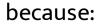
BIOLOGY

BOOKS - MBD -HARYANA BOARD

BIOTECHNOLOGY AND ITS APPLICATIONS



1. Crystals of Bt toxin produced by some bacteria do not kill the bacteria themselves



bacteria are resistant to the toxin



2. Crystals of Bt toxin produced by some bacteria do not kill the bacteria themselves because:

Toxin is immature

3. Crystals of Bt toxin produced by some bacteria do not kill the bacteria themselves because:

Toxin is inactive

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4. Crystals of Bt toxin produced by some bacteria do not kill the bacteria themselves because:

bacteria encloses toxin in a special sae.





5. What are transgenic bacteria?Illustrate

using any one example.



6. Compare and constrast the advatages and

disadvatages of production of genetically modified crops.

7. What are Cry proteins ?Name an organism that produces it.How has man exploited this protein to his benefit?



8. How is Bacillus thuriengienesis useful in

biocontrol of insect pests?

9. Bacillus thuriengenesis has great p[otential

in biocontrol or pesets.Explain.

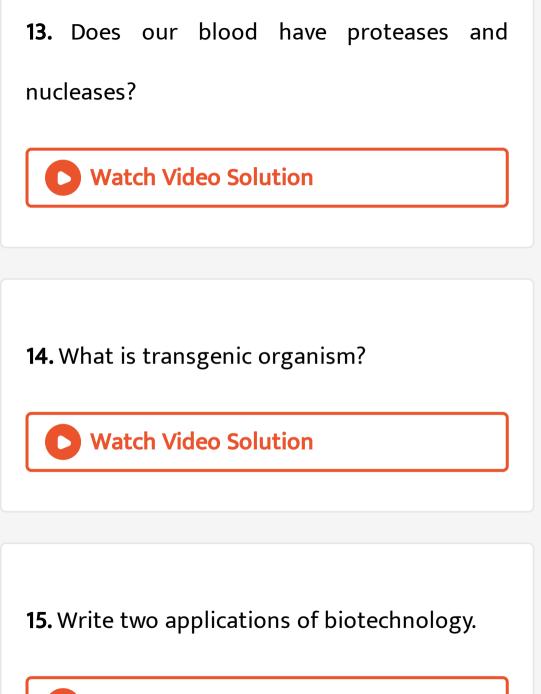
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10. What is gene therapy?Illustrate using the example of adenosine deaminease (ADA) deficiency.

11. Can you suggest a method to remove oil (hydrocarbon) from seeds based on your understanding of rDNA technology and chemistry of oil?

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12. Find out from internet what is Golden Rice.



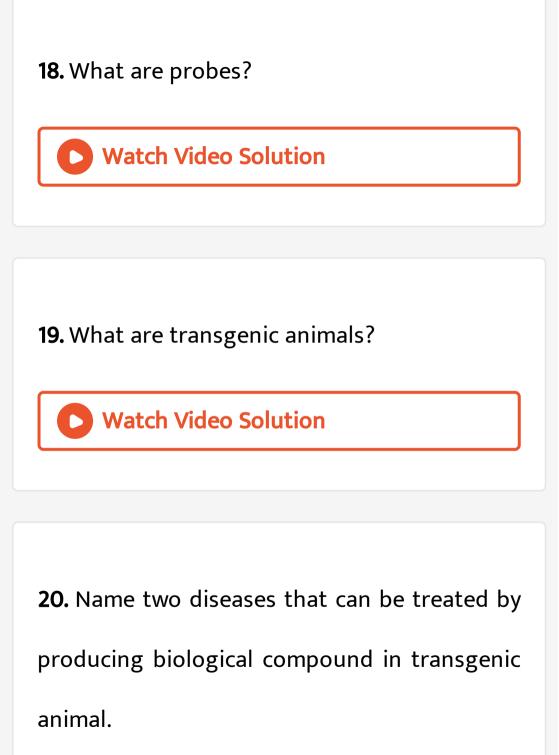
16. Write scientific name of nematode that attack roots of tobacco plant.

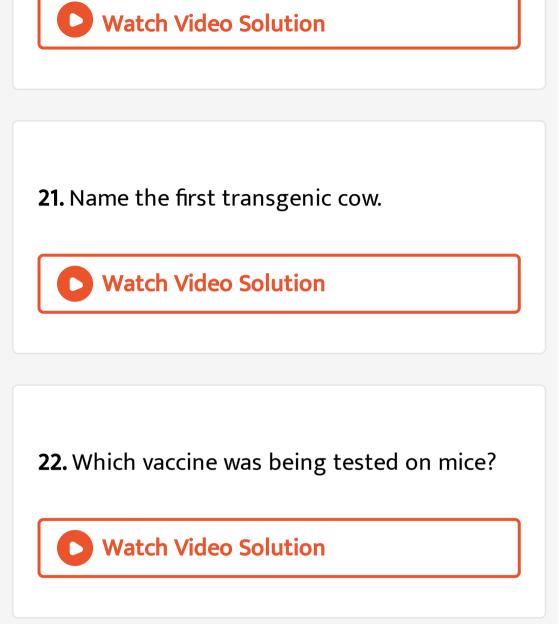


17. Name the bacterium used as vector to

insert gene.







23. Expand GMO.



24. Name the toxin produced by Bacillus thuringiensis .

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25. What is the utility of Bt-Toxin gene?

26. Name the insect killed by Bt-toxin which

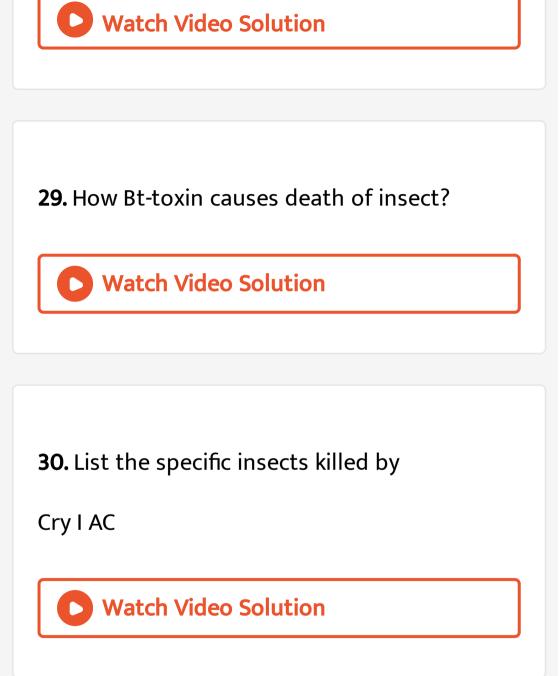
attack cotton plants.



27. Bt-toxin protein exist in whch form?

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28. How is inactive Bt-toxin converted into active form?



31. List the specific insects killed by

cry II Ab.

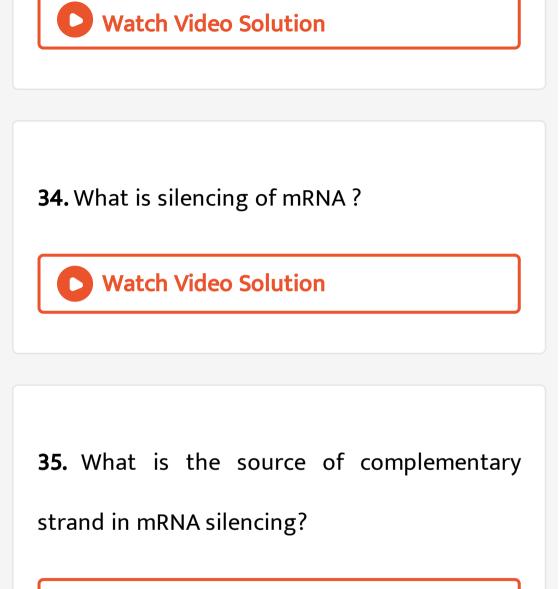
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32. Name the insects killed by proteins coded

by cry II ab and cry III Bb.

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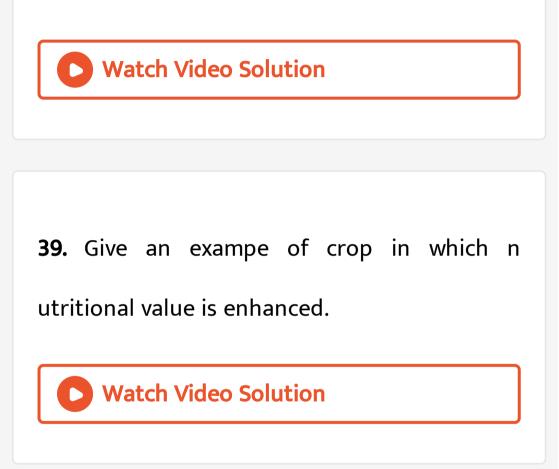
33. What is unique about transgenic animals?



36. Name the vector which act as killer of nematode by secreting interferens RNA. **Vatch Video Solution**

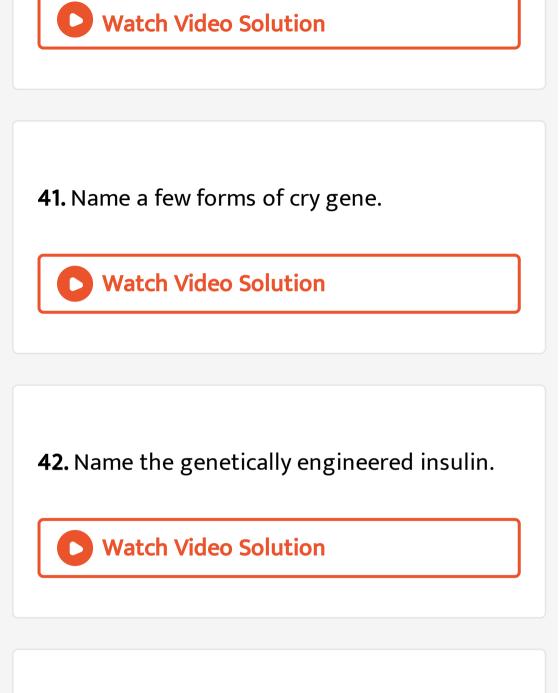
37. Name the transgenic cow which produces huan protein enriched milk.Give specific contents of milk.

38. How is INDIAN Basmati uique?



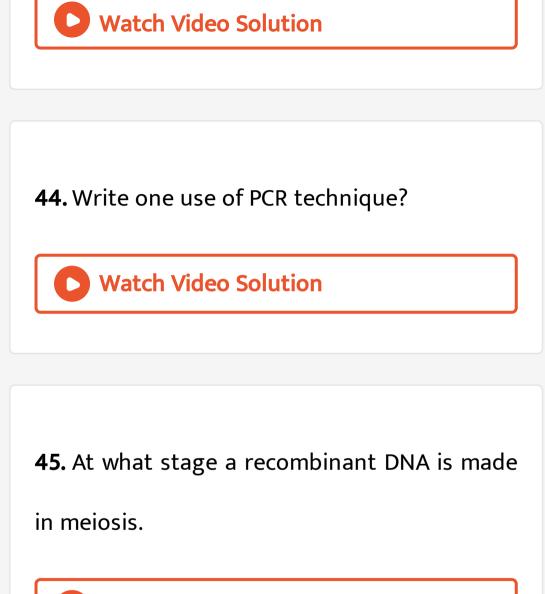
40. List a few genetically modified plants havig

Bt-toxin gene.



43. What is the product of Bt-toxin genes?

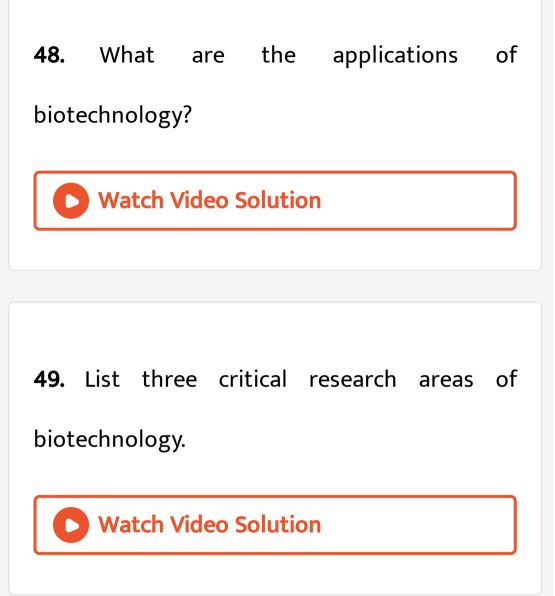
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46. Name the insulin produced by genetic engineering?
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47. Name a 'natural genetic engineer' of plants.





50. Define Genetically Modified

Organisms(GMO).Name two factors on which

their behavior depends.

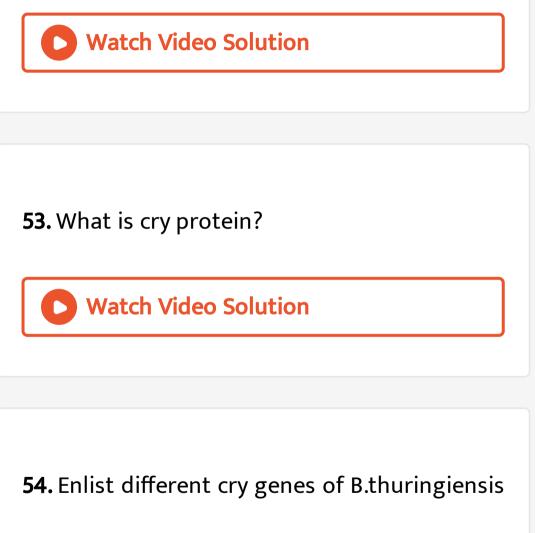


51. List a few transgenic organisms and their

potential application.



52. Give the few characteristics of GMOs.



and their target insects.

55. How is transgenic tobacoo plant protected against Meloidogyne incognita?Explain the process.

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56. What are advantages of molecular

diagnostic over conventionall methods?

57. List two uses of cloned genes in molecular

diganostics.



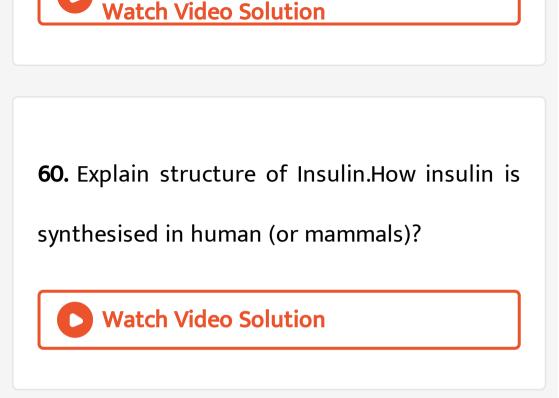
58. How is early detection of infectious

deiseases possible by molecular diagnostics?

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59. How is ELISA test carried out?





61. Why insulin is being extracted from

bacrteria rather tha animal source?

62. What is a gene library ?

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63. Why is the use of probes considered better than conventional diagnostic tools for disease diaagnosis?

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64. What is reporter or marker gene?

65. Name three different marker genes used in

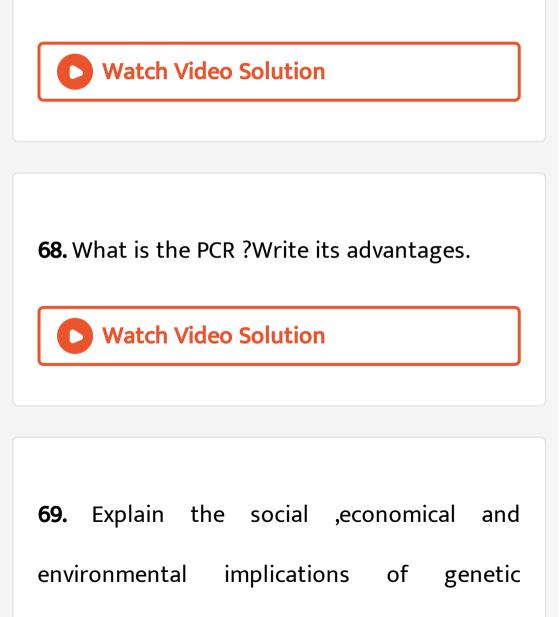
gene transfer in animal cells.

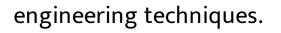


66. Name different transfection methods.



animal for transgenic production?







70. Name a few useful products obtained from

animal cell lines.

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71. What are the ethical concerns of biotechnology?

72. Write a note on bioethics.

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73. Describe the responsibility of GEAC set up

by the Indian Government.

74. Write a short note on:

Production of human growth hormone by E.coli.



75. Write a short note on:

Animals as organ donors for humans.



76. Write a short note on:

Plant Variety Protection and Farmer's Right

Act.

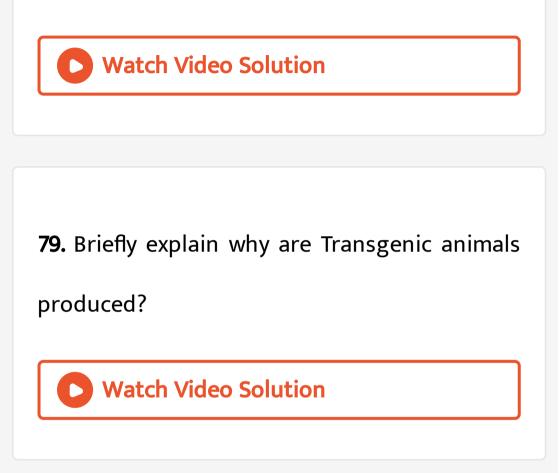


77. Explain the following terms in one or two sentences:intelletual property rights,humulin

and biofortified foods.



78. Write a note on Bt Cotton.



80. Define probes.



81. Show the steps involved in gene transfer for the production of human insulin.

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82. Explain the following terms in not more than 70 words.

Biopatent

83. Explain the following terms in not more

than 70 words.

Bioethics

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84. Explain the following terms in not more than 70 words.

Biopiracy.

85. Show the application of recombinant DNA

products.

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86. Make a list of genetically engineered

microbes and their applications.

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87. Describe hazards of transgenic animals.



88. Why E.Coli is used as competent host in

rDNA technology?

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89. Describe the enzymes involved in

recombinant DNA technology.

90. What are the advantages of edible

vaccines?



91. What are transgenic animals? How are they

useful to mankind?

92. How transgenic animals are helpful in the

study of human diseases?

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93. Why Bt toxin gene does not kill Bacillus

bacteria in which it is found ?

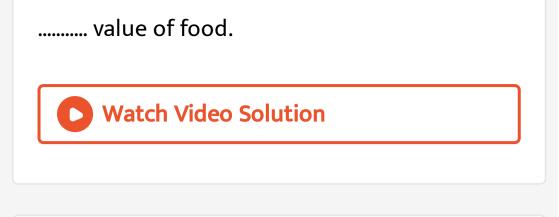


94. What do you mean by 'Golden Rice'?

Watch Video Solution Exercise 1. toxin is produced by bacterium Bacillus thuringiensis. Watch Video Solution

2. Fill in the blanks with suitable words:

In GM plants, genetic modifications enhances



- **3.** Fill in the blanks with suitable words:
- A nematode incognitia infects roots of
- tobacco plants and cause a great reduction in

yields.



4. Fill in the blanks with suitable words:

At present about 30 recombinant have

been approved for human use the world over.



5. In insulin chain A and chain B are linked together by bridges.

6. therapy is a collection of methods

that allows correction of a gene defect that

has been diagnosed in child/ embryo.



7. State true or false:

Recombinant DNA technology has made

possible to engineer microbes, plant and

animals such that they have novel capabilities.



8. State true or false:

Gene therapy is the extrction of genes into an

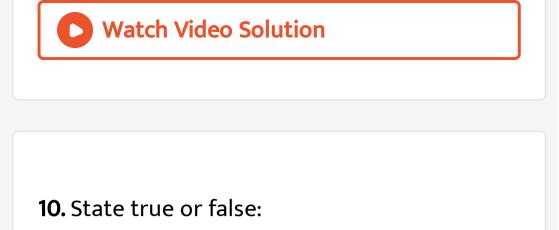
individuals cells and tissues to treat diseases

especially hereditary dieases.

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9. State true or false:

Human insulin is made in yeast cells,yet its structrue is absolutely identical to that of natural molecule.



Today, transgenic models exist for many human

diseases such as cancer,cystic

fibrosis, rheumatoid arthritis and Alzheimer's

diesease.

11. Cloned genes are used as probes to detect

the presence of its complementary DNA strand



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12. State true or false:

Insulin consists of three short polypeptide

chains i.e. chain A.chain B and chain C.



13. Coin one word for the following statements:

Enzye linked imunosorbant Assay.

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14. Coin one word for the following statements:

Standards followed to regulate the activities

linked with biological activation.

15. Coin one word for the following statements:Small nucleotide sequences used to detect the poresence of complimentary sequence in nucleic acid sample.

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16. Coin one word for the following statements:

A graft between organisms of different

species.



17. Coin one word for the following statements:

Procedure of producing a clone of genetically

similar cells.

18. Coin one word for the following statements:Theft or robbery of biological resources of a

country is caled.

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19. Biopiracy is related to which of the following?

A. Traditional knowledge

B. Biomolecules are regarding bioresources

genes isolated from bioresources

- C. Bioresoureces
- D. All of the above.

Answer:



20. Which of the following risks are associated

with genetically modified food?

Toxicity

Allergic reaction

Antibiotic resistance in microorganisms

present in alimentary canal

A. I and II

B. I,II and III

C. I and III

D. II and III.

Answer:

21. A transgene expression can achieve which of the following?

A. Prevent expression of a native gene

B. Modify an existing biosynthetic pathway

C. Produce a protein that itself produces

the phenotype of interest or is the

product of interest

D. All of the above.

Answer:

22. What is gene bank?

A. They are laboratories where DNA of diverse plants are isolated and stored B. An institution where seeds or vegetative parts of endangered species are preserved in a viable condition for future use

C. It is a garden where a variety of plants

are grown

D. Natural reserve.

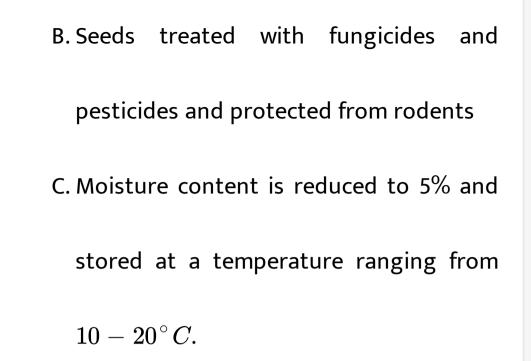
Answer:

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23. How are seeds stored in a gene bank?

A. Seeds are dried and stored at room

temperature



D. None of the above.



24. What are transgenic plants?

- A. Plants whch are pure breeding
- B. Plants containing specially introduced

genes and hence showing tolerance to

select herbicides

C. A crop plant which is not desttroyed by

herbicides

D. A plant resistant to insect pests.



25. At crypreservation of germplasm the biological activity:

- A. Essentially ceses
- B. Cell division stops
- C. No genetic change occurs
- D. All of the above.





26. The Ti plasmid, is often used for making transgenic plants. This plasmid is found in

A. Rhizobium of the roots of leguminous

plants

B. Agrobacterium

C. Yeast as a 2 mm plasmid

D. Azotobacter.



27. In transgenics, expression of transgene in

target tissue is determined by :

A. transgene

B. promoter

C. reporter

D. enhancer.

Answer:



28. ELISA isused to detect viruses, where.

A. Southern blotting is done

B. alkaline phosphatase is the key reagent

C. catalase is the key reagent

D. DNA-probes are required.

Answer: