



BIOLOGY

BOOKS - MODERN PUBLICATION

APPLICATION OF BIOTECHNOLOGY IN HEALTH AND AGRICULTURE

Exercise

1. A transgene in golden rice encodes an enzyme for biosynthesis of :

A. beta-carotene

B. Glycolate

C. Luciferin

D. Cry protein

Answer:



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2. Fruit ripening is delayed by preventing the expression of enzyme :

A. Nitrogenase

B. Luciferase

C. Polygalacturonase

D. Polymerase

Answer:



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3. Humulin is manufactured by

A. Aventis

B. Eli Lilly Corporation

C. Pfizer

D. Hoechst

Answer:



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4. Genetic correction of inflicted cells is made in vitro and then reimplanted into its natural environment. This therapy is known as :

- A. In vitro therapy
- B. Ex-vivo gene therapy
- C. In vivo therapy
- D. None of these

Answer:



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5. The first genetic disorder treated by gene replacement therapy is :

A. Cystic fibrosis

B. Duchenne muscular dystrophy

C. Severe combined immune deficiency

(SCID)

D. Familial hypercholesterolemia

Answer:



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6. Patent is not granted for:

A. A novel invention

B. A discovery

C. An invention with industrial application

D. An innovation invention

Answer:



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7. The super mouse is a genetically modified animal with :

- A. Insulin transgene
- B. Lipid biosynthesis transgene
- C. Growth hormone transgene
- D. Steroid hormone transgene

Answer:



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8. Which is the nodal centre for Indian biosafety network?

A. Department of Biotechnology

B. Department of Science and Technology

C. IARI

D. Department of Forest and Environment

Answer:



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9. The use of bioresources by multinational companies and other organisations without proper authorisation from the countries and

people concerned without compensatory payment is called:

A. Bioethics

B. Biopiracy

C. Bioterror

D. Bioweapon

Answer:



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10. Who is responsible for obtaining interferons through recombinant DNA technique ?

A. A.R. Bunting

B. Eli Lilly

C. A. Tiselius

D. Charles Weissmann

Answer:



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11. Golden rice - a transgenic variety of rice are principally richer than normal rice in:

A. Cry I Ab

B. Hirudin

C. TPA

D. beta-carotene

Answer:



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12. Southern blotting can't be performed without :

A. Restriction endonucleases

B. Agarose

C. Monoclonal antibodies

D. Both (a) and (b)

Answer:



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

A. Bacteria are resistance to the toxin

B. Toxin exists as toxoid

C. toxin exists as protoxins

D. Bacteria encloses toxin in a special sac

Answer:



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14. What is the permanent cure of adenosine deaminase (ADA) deficiency in children ?

A. Bone marrow transplantation

B. Enzyme replacement therapy in which functional ADA is given to patient by injection

C. Infusion of genetically engineering lymphocytes (in which functional ADA-

cDNA is introduced) into the patient's
body

D. Introduction of gene isolated from bone
marrow cells embryonic stages

Answer:



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15. The technique by which virus detection can
be made both in plants and animals is known
as:

A. Enzyme linked immune absorbent assay

(ELISA)

B. Electrophoresis

C. Electron microscopy

D. Immunofluorescence

Answer:



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16. Interferons are :

- A. Proteins released in minute quantities by animals or plant cells, on being infected with virus
- B. Proteins synthesized in large quantities by cells actively engaged in synthesis
- C. Hormones released by cells in small quantities which influence some of the various physiological activities
- D. Defensive mechanism

Answer:



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17. The hybridoma technique was developed by:

A. Louis Pasteur

B. Edward Jenner

C. Georges Kohler and Caser Milstein

D. Burnet

Answer:



18. BT cotton is not :

- A. A GM plant
- B. Insect resistant
- C. A bacterial gene expression system
- D. Resistant to all pesticides

Answer:



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19. C-peptide of human insulin is:

A. A part of mature insulin molecule

B. Responsible for formation of disulphide bridges

C. Removed during maturation of proinsulin to insulin

D. Responsible for its biological activity

Answer:



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20. GEAC stands for:

A. Genome Engineering Action Committee

B. Ground Environment Action Committee

C. Genetic Engineering Approval
Committee

D. Genetic and Environment Approval
Committee

Answer:





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21. The trigger for activation of toxin of bacillus thuringiensis is:

- A. Acidic pH of Stomach
- B. High temperature
- C. Alkaline pH of gut
- D. Mechanical action in the insect gut

Answer:



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22. Golden rice is:

A. A variety of rice grown along with yellow river in China

B. Long stored rice having yellow colour tint

C. A transgenic rice having gene for beta-carotene

D. Wild variety of rice with yellow coloured grains

Answer:



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23. Which one of the following microorganisms is used for production of citric acid in industries ?

A. *Lactobacillus vulgaris*

B. *Penicillium citrinum*

C. *Aspergillus niger*

D. *Rhizopus nigricans*

Answer:



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24. The new strain of bacteria produced by biotechnology in alcohol industry is:

- A. *Escherichia coli*
- B. *Saccharomyces cerevisiae*
- C. *Bacillus subtilis*
- D. *Pseudomonas putida*

Answer:



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25. Choose the correct answer from the choices given under each bit./ Give the answer in one word only.

Genetic engineered bacteria have been used in commercial production of

A. Thyroxine

B. Testosterone

C. Human insulin

D. Melatonin

Answer:



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26. A cell coded protein that is formed in response to infection with most animal viruses is called:

A. histone

B. vaccine

C. antibody

D. interferon

Answer:



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27. During "gene cloning" which is called as "gene taxi" ?

A. Vaccine

B. Plasmid

C. Bacterium

D. Protozoa

Answer:



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28. What does Bt stand for the popular crop Bt cotton ?

A. Biotechnology

B. Best type

C. *Bacillus tomentosus*

D. *Bacillus thuringiensis*

Answer:



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29. The main technique involved in agricultural biotechnology is called:

A. Tissue culture

B. Transformation

C. Plant breeding

D. DNA replication

Answer:



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30. What is the reason of formation of embryoid from pollen grain in tissue culture medium ?

A. Cellular totipotency

B. Organogenesis

C. Double fertilization

D. Test tube culture

Answer:



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31. The technique of obtaining large number of plantlets by tissue culture method is called:

A. Organ culture

B. Micropropagation

C. Macropropagation

D. Plantlet culture

Answer:



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32. A cybrid is a hybrid carrying:

A. cytoplasm of two different plants

B. genomes and cytoplasm of two different plants

C. cytoplasm of two different plants and genome of one plant

D. genomes of two different plants

Answer:



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33. Biogas produced by anaerobic decomposition used in combustion is mainly due to presence of:



D. None of these

Answer:



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34. Hybridoma technology has been successfully used in:

- A. synthesis of haemoglobin
- B. productin of alcohol in bulk
- C. production of somatic hybrids
- D. synthesis of monoclonal antibodies

Answer:



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

- A. Bio-metallurgical techniques
- B. Bio-mineralization process
- C. Bioinsecticidal plants
- D. Biofertilizers

Answer:



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36. Golden rice is a promising transgenic crop.

When released for cultivation, it will help in :

- A. alleviation of vitamin -A deficiency
- B. pest resistance
- C. herbicide tolerance
- D. producing a petrol-like fuel from rice

Answer:



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37. Human insulin is being commercially produced from a transgenic species of:

- A. Rhizobium
- B. Escherichia
- C. Saccharomyces
- D. Mycobacterium

Answer:



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38. What is antisense technology ?

A. RNA polymerase producing DNA

B. Producing of somaclonal variants in tissue cultures

C. A cell displaying a foreign antigen used for synthesis of antigens

D. When a piece of RNA that is complementary in sequence is used to stop expression of a specific gene

Answer:



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39. The process of RNA interference has been used in the development of plant resistant to:

A. Nematodes

B. Fungi

C. Viruses

D. Insects

Answer:



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40. Maximum number of existing transgenic animals is of:

A. Fish

B. Mice

C. Cow

D. Pig

Answer:



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

A. Canolla

B. Golden rice

C. Bt-Brinjal

D. Flav'r Savr' tomato

Answer:



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42. Which of the following Bt crop is being grown in India by the farmers?

A. Cotton

B. Brinjal

C. Soyabean

D. Maize

Answer:



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43. The first human hormone produced by recombinant DNA technology is:

- A. Insulin
- B. Estrogen
- C. Thyroxin
- D. Progesterone

Answer:



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44. Fill up the blank

Genetically

engineered

tomato

_____ exhibits a delayed ripening.



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45. Fill up the blanks with correct answer :

Monoclonal antibodies are synthesized by a

hybrid cell called ____ .



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46. Which department of the Govt. of India is the nodal centre for Indian- biosafety network ?



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47. What term is used for a genetically modified rice with vitamin-A ?



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48. Name the gene that encode Bt toxin.



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49. What term is used for accumulation of non-biodegradable substances in trophic levels ?



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50. Name the organisms that destroy the stored food grains.



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51. What term is used for genes which are transferred to organism ?



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52. Name the anti-cancer drugs extracted from plants.



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53. Explain ELISA.



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54. Fill up the blank

Patents are granted for _____



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55. Golden rice is enriched with _____.



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56. _____ was the first transgenic crop.



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57. _____ is the first cloned sheep.



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58. Fill up the blank

Gene tranfer technique in animal cells is known as _____



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59. Fill up the blank

The _____ is the most widely used broad spectrum herbicide world over.





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60. Hybridoma is a somatic hybrid cell of a myeloma and _____.



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61. Fill up the blanks with correct answer (s)./Correct the underlined portion of the sentences :

Hybridoma produces _____.



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62. _____ is a trade name for manufacturing human insulin in India.



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63. SCID is caused due to a failure of synthesis of an enzyme_____.



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64. Fill in the blanks with the correct answer(s): The transgenic mouse is called as ____.



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65. Bt stands for_____.



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66. Fill up the blank

The recombinant human insulin is termed as _____



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67. The first GMO was created by _____ and _____.



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68. Fill up the blank

Patents are granted for _____



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69. A bioluminescent plant is generated by transferring.....gene of a firefly into plant protoplasts.



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70. Fill in the blanks

Delayed ripening in tomato is due to the expression of an enzyme_____



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71. A mass of undifferentiated plant cells in culture media is called organ.



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72. Which protein is present on coated vesicles ?



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73. Bioplastics are non-biodegradable.



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74. Insulin gene is inserted into Rhizobium for nitrogen fixation.



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75. nif gene makes an enzyme Aminase.



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76. Insulin is a dimeric enzyme.



[Watch Video Solution](#)

77. Bt protein is a herbicide.



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78. What is recombinant vaccine?



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79. What is patent?



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80. What is golden rice?



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81. What is Flavr-Savr Tomato ?



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82. What is pharming?



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83. What do you mean by a biopesticide? Give an example.



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84. (Restrict to 2 or 3 important sentences)

What is a super mouse ?



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85. What does the recombinant hepatitis-B vaccine contain?



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86. Biopiracy.



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87. What are the Indian Patent acts ?



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88. What is Humulin ?



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89. Differentiate between : Ex Vivo gene therapy and in Vivo gene therapy.



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90. Write short note on Biotechnology in Medicine and Agriculture.



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91. Write short note

Gene Therapy



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92. Write notes on : Genetically modified organism.



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