



BIOLOGY

BOOKS - ARIHANT PRAKASHAN

APPLICATIONS OF BIOTECHNOLOGY

Topic 1 Practice Questions 1 Mark Questions

1. Fill in the blanks with the correct answer(s):

Genetically engineered rice rich in vitamin A is

known as ____.



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2. Which one of the following is/are applied in several medical diagnostic procedures?

A. Recombinant DNA technology

B. Polymerase chain reaction

C. ELISA

D. All of the above

Answer: D



3. Golden rice is produced by rice plant having a transgene encoding an enzyme in the biosynthesis pathway of:

A. β -carotane

B. luciferin

C. glyphosate

D. Bt protein

Answer: A



4. Fill in the blanks

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

A. luciferase

B. polygalacturonase

C. nitrogenase

D. adenosine deaminase

Answer: B



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5. Humulin is manufactured by

A. Pfizer

B. Hoechst

C. Eli Lilly

D. Aventis

Answer: C



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

A. ex vivo gene therapy

B. in vivo gene therapy

C. in vitro gene therapy

D. in toto gene therapy

Answer: A



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7. Herbicide resistant plants are generated by plant tissue culture technique by transferringgene of a bacterium into a plant protoplast.



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8. A bacterium species ofgenus is genetically engineered to prevent frost formation in plants.



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9. Fill up the blanks with correct answer :
Monoclonal antibodies are synthesized by a hybrid cell called ____ .



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10. Fill up the blank

Severe Combined Immunodeficiency (SCID) is caused due to a failure of synthesis of an enzyme_____



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



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12. Golden rice is produced by rice plant having a transgene encoding an enzyme in the biosynthesis pathway of:





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13. The name of toxic protein produced by *Bacillus thuringiensis* is _____.



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14. Fill up the blank

Genetically engineered tomato

_____ exhibits a delayed ripening.



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15. Which somatic hybrid cell, produces monoclonal bodies?



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16. Name one plant used to create novel transgenic plants.



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Topic 1 Practice Questions 2 Mark Questions

1. What is Humulin ?



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2. What is recombinant vaccine?



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3. Write notes with 2 to 3 important points

Bacillus thuringiensis



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4. Why do the toxic insecticide proteins secreted by *Bacillus thuringiensis* kill insects?



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5. What is golden rice?



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6. What is Flavr Savr?





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7. What do you understand by ex vivo gene therapy?



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



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9. What are frost protected plants?



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10. How is a mature, functional insulin hormone different from its prohormone forms?



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Topic 1 Practice Questions 3 5 Mark Questions

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



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2. Write notes on : Genetically modified organism.



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3. Write a brief note on the herbicide resistant plants.



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1. Explain what is gene therapy. Write about the two types of gene therapy.



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2. What are the various applications of biotechnology in the field of agriculture and forestry?



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Topic Test 1

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

A. Familial Hypercholesterolemia (FH)

B. Cystic Fibrosis (CF)

C. Duchenne Muscular Dystrophy (DMD)

D. Severe Combined Immuno Deficiency
(SCID)

Answer: D



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Topic Test 2

1. Fill in the blanks

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



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2. Patent is not granted for:

A. a novel invention

B. an invention having on industrial application

C. a discovery made by previously existing knowledge

D. an invention having an inventive step

Answer: C



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Topic Test 3

1. Fill in the blank

The first recombinant human vaccine

produced and marketed is _____ vaccine.



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2. Which of the following is not related to biosafety?

A. convention on Biological Diversity

B. Cartagena Protocol

C. World Trade Organisation

D. UNICEF

Answer: D



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Topic Test 4

1. Humulin is manufactured by



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2. Which of the following transgenic protein product has been used to treat emphysema ?



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Topic Test 5

1. Name the drugs isolated from *Catharanthus roseus* for cancer treatment.



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2.was the first transgenic cow



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Topic Test 6

1. The corn was genetically engineered by transferring Bt protein gene into plant protoplasts. The brand was marketed and later was withdrawn due to safety reasons.



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2. Plants possessing genes of other organisms are called _____ plants.



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Topic Test 7

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



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2. What is a supermouse?



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Topic Test 8

1. Write any three ways on how genetically modified plants are found to be useful.



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2. What do you mean by biopatent?



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Topic Test 9

1. Which genes encode the protein to control bollworms infection in cotton plants ?



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2. Differentiate between animal farming and animal cloning.



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Topic Test 10

1. What is ADA deficiency ? Mention its cause.
And what are three methods to cure it.



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2. Describe the evolution of Indian Patent Act.



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Topic 2 Practice Questions 1 Mark Questions

1. What is the name of the scientist who cloned a sheep named Dolly?



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



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3. Fill in the blank

The transgenic mouse is called as _____



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4. Which of the following patent cases, India is not directly or indirectly connected with ?

- A. Soyabean patent case
- B. Neem patent case
- C. Turmeric patent case
- D. Chakraborty patent case

Answer: A



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5. 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: C



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6. A legal right, privilege and authority granted to a person for a limited period for an invention is known as.....



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7. Fill up the blank

The use of novel biological resource of a sovereign country without its due permission is known as _____



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8. The biosafety protocol that was drafted in 1995 and adopted in 2000. true or false



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Topic 2 Practice Questions 2 Mark Questions

1. What is patent?



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2. Write a note on transgenic animals.



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Topic 2 Practice Questions 3 Mark Questions

1. Enumerate and explain in brief two biosafety issues, biotechnology is confronted with



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2. Write a detailed note on biopiracy.



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Topic Test 11

1. Describe the three controversial case regarding patent and biopiracy in India.



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Chapter Test

1. A biotech company that released first even genetically manipulated flower into the market is

A. Cryobank

B. Eli Lilly

C. Florigene

D. Genentech

Answer: C



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2. Which of the following is produced by genetical engineered bacteria ?

A. Thyroxine

B. Insulin

C. Glucagon

D. ADH

Answer: B



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3. Cry II Ab and Cry Ab produce toxins that control

A. cotton bollworms and corn borers,
respectively

B. corn borers and cotton bollworms,
respectively

C. tobacco budworms and nematodes,
respectively

D. nematodes and tobacco budworms,
respectively.

Answer: A



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4. First genetically modified plant commercially released in India is ---.

A. Golden rice

B. slow ripening tomatoes

C. Bt brinjal

D. Bt cotton

Answer: D



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5. Soil bacterium Nitrosomonas syringae promotes ice nucleation in plants.



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6. Antitrypsin is an agent that dissolves blood clot.



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7. The first transgenic sheep was Lilly.

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8. State the number of polypeptides found in mature human insulin.

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9. Which bacterium species is involved in Diamonds vs Chakraborty case?



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10.is a mammalian protein that have been successfully expressed in plants.



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11.is an infant nutrition formula that has been harvested using transgenic animals as bioreactors.



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12. What do you mean by the term transgene?



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13. Mention the steps involved in insulin production by genetic engineering.



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14. How recombinant DNA technology is useful in detecting the presence of mutated genes?



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15. State why biopiracy should be prevented and how?



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16. Write a short note on convention on biological diversity.



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