



# **BIOLOGY**

# **BOOKS - ARIHANT PRAKASHAN**

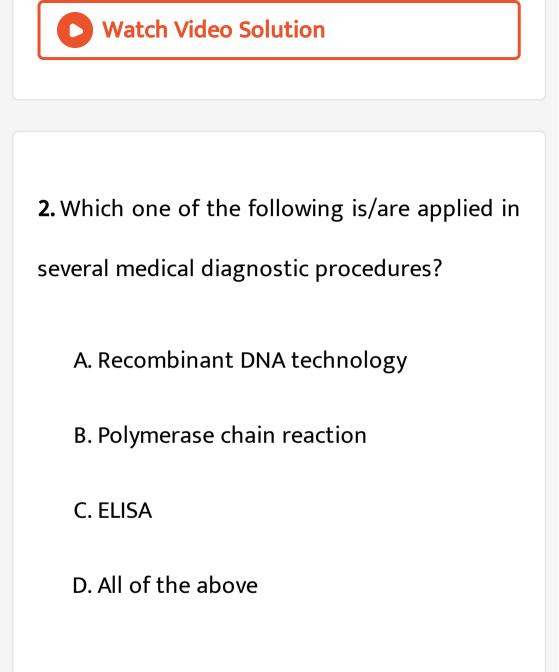
# **APPLICATIONS OF BIOTECHNOLOGY**

**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 \_\_\_\_.



#### Answer: D





3. Golden rice is produced by rice plant having

a transgene encoding an enzyme in the biosynthesis pathway of:

A.  $\beta$ -carotane

B. luciferin

C. glyphosate

D.  $\underline{\mathrm{Bt}}$  protein







**4.** Fill in the blanks

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

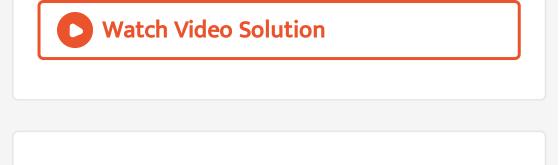
A. luciferase

B. polygalacturonase

C. nitrogenase

D. adenosine deaminase

Answer: B



- 5. Humulin is manufactured by
  - A. Pfizer
  - B. Hoechst
  - C. Eli Lilly
  - D. Aventis

#### Answer: C



**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

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

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**8.** A bacterium species of .....genus is genetically engineered to prevent frost formation in plants.





**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 failture of synthesis of an

enzyme\_\_\_\_\_

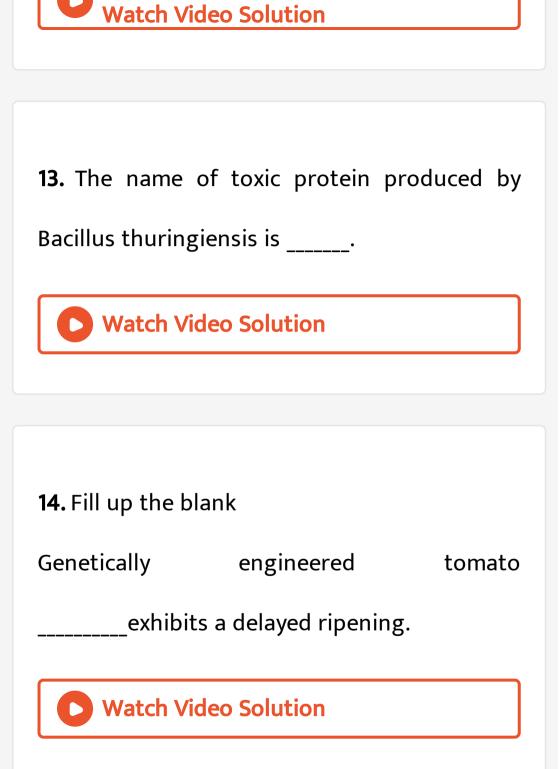


**11.** A bioluminescent plant is generated by transferring......gene of a firefly into plant protoplasts.

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





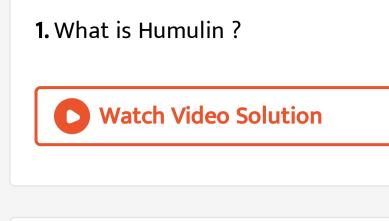
15. Which somatic hybird cell, produces monoclonal bodies?

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



Topic 1 Practice Questions 2 Mark Questions



2. What is recombinant vaccine?



3. Write notes with 2 to 3 important points

**Bacillus thuringiensis** 

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



5. What is golden rice?

Watch Video Solution

6. What is Flavr Savr?





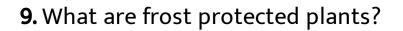
7. What do you understand by ex vivo gene

therapy?

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8. What do you mean by a biopesticide? Give

an example.





**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.



3. Write a brief note on the herbicide resistant

plants.

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Topic 1 Practice Questions 7 Mark Questions

1. Explain what is gene therapy. Write about

the two types of gene therapy.

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



#### 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 reviously existing

knowledge

D. an invention having an inventive step

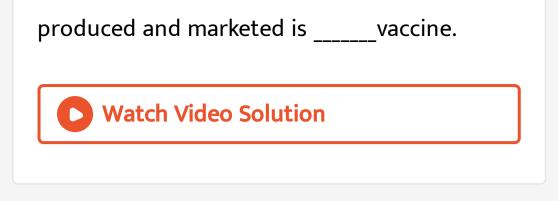
Answer: C

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**Topic Test 3** 

1. Fill in the blank

The first recombinant human vaccine



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

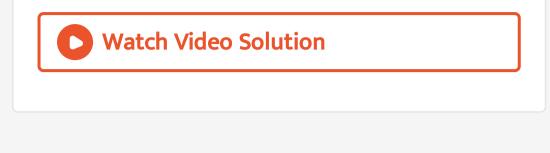
A. convention on Biological Diversity

B. Cartagena Protocol

C. World Trade Organisation

D. UNICEF







#### 1. Humulin is manufactured by



2. Which of the following transgenic protein

product has been used to treat emphysema ?

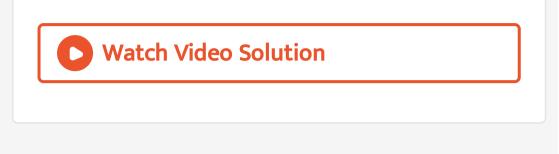




1. Name the drugs isolated from Catharanthus

roseus for cancer treatment.

2. .....was the first transgenic cow



#### Topic Test 6

 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.



#### 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?

2. What is a supermouse?

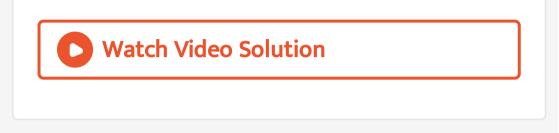




1. Write any three ways on how genetically

modified plants are found to be useful.

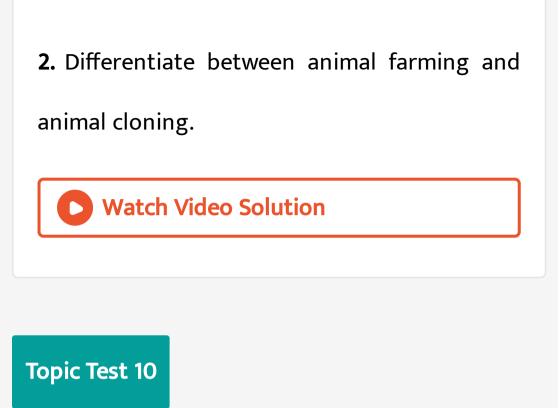
2. What do you mean by biopatent?





1. Which genes encode the protein to control

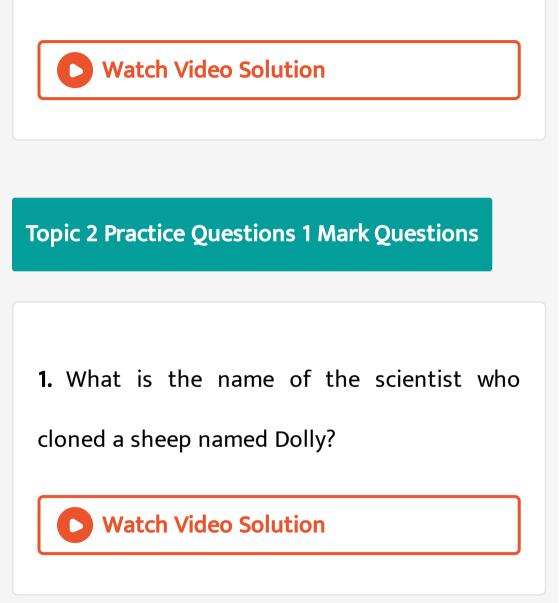
bollworms infection in cotton plants ?



1. What is ADA deficiency ? Mention its cause.

And what are three methods to cure it.

2. Describe the evolution of Indian Patent Act.



2. Which department of the Govt. of India is the nodal centre for Indian-biosafety network ? Watch Video Solution **3**. Fill in the blank The transgenic mouse is called as



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

**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

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



## 7. Fill up the blank

The use of novel biological resource of a

sovereign country without its due ppermission

is known as\_\_\_\_\_

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?

2. Write a note on transgenic animals.



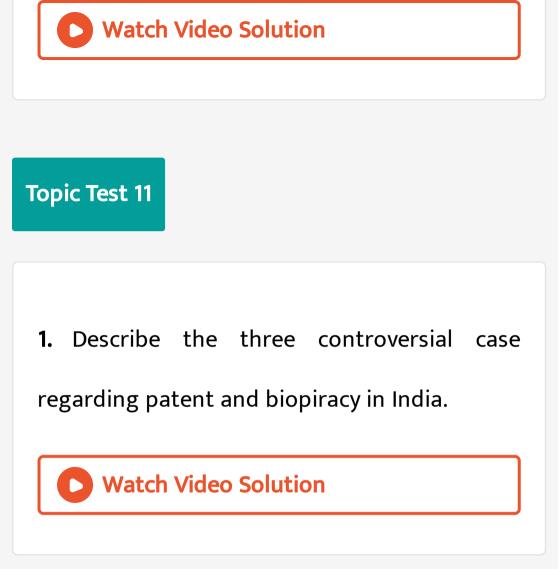
## **Topic 2 Practice Questions 3 Mark Questions**

1. Enumerate and explain in brief two biosafety

issues, biotechnology is confronted with



**2.** Write a detailed note on biopiracy.



**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

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

A. Thyroxine

B. Insulin

C. Glucagon

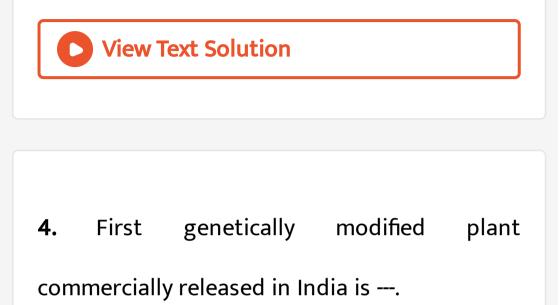
D. ADH

Answer: B

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

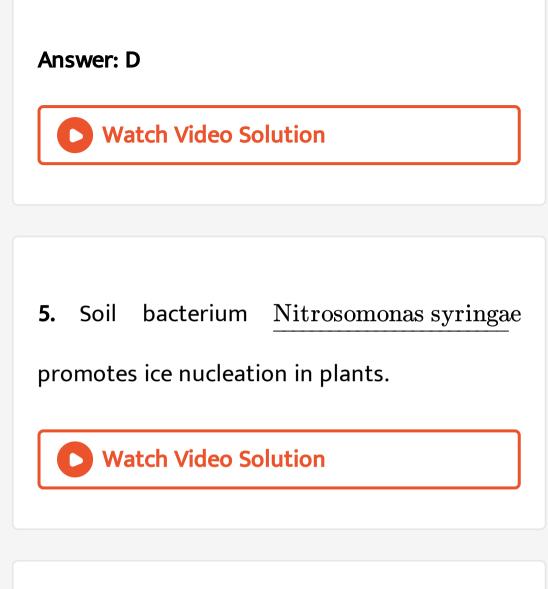
A. cotton bollworms and corn borers, respectively B. corn borers and cotton bollworms, respectively C. tobacco budworms and nematodes, respectively D. nematodes and tobacco budworms, respectively.

#### Answer: A

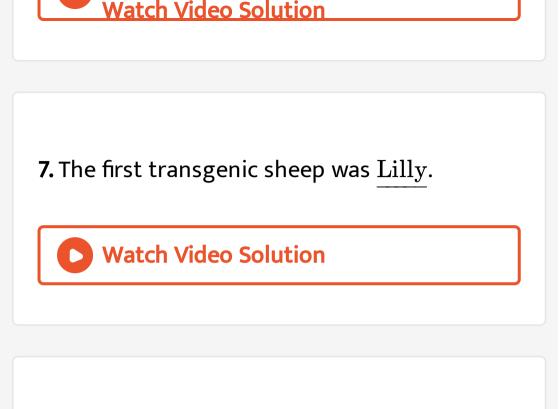


A. Golden rice

- B. slow ripening tomatoes
- C. Bt brinjal
- D. Bt cotton



**6.** <u>Antitryposin</u> is an agent that dissolves blood clot.



8. State the number of polypeptides found in

mature human insulin.

9. Which bacterium species is involved in

Diamonds vs Chakraborty case?

View Text Solution

10. .....is a mammalian protein that have been

successfully expressed in plants.

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



## 12. What do you mean by the term transgene?



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

14. How recombinant DNA technology is useful

is detecting the presence of mutated genes?

15. State why biopiracy should be prevented and how?
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16. Write a short note on convention on

biological diversity.

