

**SAINIK SCHOOL GOPALGANJ**  
**ASSIGNMENTS**  
**BIOLOGY (044)**

**Chapter 12: Biotechnology and its Applications**  
**General Instructions**

**Class: XII**

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1. All questions are compulsory.
  2. Question 1 to 10 is multiple choice questions.
  3. Question 11 to 15 is short answer questions.
  4. Question 16 to 20 is long answer questions
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Q1. The genetically modified brinjal in India has been developed for

- A. Drought resistance
- B. Enhancing mineral content
- C. Enhancing shelf life
- D. Insect resistance

Q2. Which kind of therapy was given in 1990 to a four-year-old girl with ADA deficiency?

- A. Radiation Therapy
- B. Gene Therapy
- C. Radiation Therapy
- D. Immunotherapy

Q3. The genetically modified brinjal in India has been developed for

- A. Enhancing mineral content
- B. Insect-resistance
- C. Drought resistance
- D. Enhancing self life

Q4. The maximum number of existing transgenic animals is of \_\_\_\_\_

- A. Fish
- B. Mice
- C. Cow
- D. Pig

Q5. The process of RNA interference has been used in the development of plants resistant to \_\_\_\_\_

- A. Insects

- B. Nematodes
- C. Fungi
- D. Viruses

Q6. The first ever human hormone produced by recombinant DNA technology is \_\_\_\_\_

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

Q7. In Bt cotton, the Bt toxin present in plant tissue as pro-toxin is converted into active toxin due to \_\_\_\_\_

- A. Acidic pH of the insect gut
- B. Alkaline pH of the insect gut
- C. Presence of conversion factors in insect gut
- D. Action of gut microorganisms

Q8. Cry-I endotoxins obtained from *Bacillus thuringiensis* are effective against

- A. Nematodes
- B. Flies
- C. Mosquitoes
- D. Boll worms

Q9. Which of the following is not used as a biopesticide?

- A. *Xanthomonas campestris*
- B. *Bacillus thuringiensis*
- C. *Trichoderma harzianum*
- D. Nuclear Polyhedrosis Virus

Q10. A transgenic food crop which may help in solving the problem of night blindness in developing countries is \_\_\_\_\_

- A. Golden Rice
- B. Flavr Savr tomatoes
- C. BT soybean
- D. Starlink maize

Q11. What is GMO? How does it differ from a hybrid?

Q12. Why shouldn't the patent on Basmati have gone to an American company?

Q13. What are the disadvantages of GMO?

Q14. How can the gene expression be controlled with the help of RNA?

Q15. Who was given the first gene therapy? Why does this treatment reoccur in nature?

Q16. What are transgenic animals? Enlist any four areas where they can be used.

Q17. Explain five areas where biotechnology has influenced human lives.

Q18. (a) What are the drawbacks of the insulin obtained from the slaughtered cows and pigs?

(b) What are the advantages of recombinant insulin?

Q19. Is BT-cotton resistant to all pests other than lepidopteron, dipterans, and coleopterans? Describe the process of mechanism of action in pests.

Q20. (a) Explain the principle involved in ELISA.

(b) How is a probe used in molecular diagnostics?