

Chapter – 10 | Biotechnology and Its Applications

QUIZ
PART-02

1. Genetically Modified Organisms (GMOs) are organisms whose:

- A. Cells are increased in number
- B. Genes have been altered through genetic manipulation
- C. Proteins are removed
- D. Chromosomes are destroyed (B)

Explanation : GMOs are plants, bacteria, fungi, or animals whose genes are altered through genetic manipulation.

2. The behaviour of GMOs depends on:

- A. Only the host plant
- B. Only the transferred gene
- C. Nature of transferred gene, host organism, and food web
- D. Only environmental temperature (C)

Explanation : The behaviour of GMOs depends on the transferred gene, host plants/organisms, and their position in the food web.

3. Which of the following is a benefit of GM plants?

- A. Increasing dependence on chemical pesticides
- B. Reducing post-harvest losses
- C. Decreasing nutritional value
- D. Reducing mineral utilization efficiency (B)

Explanation : GM plants help reduce post-harvest losses, improve nutritional value, and reduce pesticide dependence.

4. Bt toxin is produced by:

- A. Escherichia coli
- B. Bacillus thuringiensis
- C. Agrobacterium tumefaciens
- D. Rhizobium (B)

Explanation : Bt toxin is a biotoxin produced by the bacterium Bacillus thuringiensis.

5. Bt toxin gene is introduced into plants to provide resistance against:

- A. Fungi
- B. Viruses
- C. Insect pests
- D. Bacteria (C)

Explanation : Bt toxin gene produces insect-resistant plants by acting as a biopesticide against insect pests.

6. Bt cotton is effective against insects belonging to:

- A. Lepidopterans, Coleopterans and Dipterans
- B. Only bacteria
- C. Only fungi
- D. Only viruses (A)

Explanation : Bt cotton helps control specific insects like tobacco budworm, beetles, flies, and mosquitoes belonging to these groups.

7. Bt toxin is present naturally in bacteria in the form of:

- A. Active toxin
- B. Protoxin
- C. Enzyme
- D. Antibody (B)

Explanation : Bt toxin remains inactive as a protoxin inside Bacillus thuringiensis and becomes active inside the insect gut.

8. Bt protoxin becomes active due to:

- A. Acidic pH of human stomach
- B. Alkaline pH of insect intestine
- C. High temperature
- D. Sunlight (B)

Explanation : The alkaline pH in the insect intestine converts inactive protoxin into active toxin.

9. Cry-IAb gene controls:

- A. Cotton bollworm
- B. Corn borer
- C. Tobacco borer
- D. Mosquitoes (B)

Explanation : Cry-IAb gene produces protein capable of controlling corn borer.

10. RNA interference (RNAi) technology is used to protect plants from:

- A. Nematode infection
- B. Insect pollination
- C. Mineral deficiency
- D. Viral mutation (A)

Explanation : RNA interference technology is used to prevent infection by nematodes such as Meloidogyne incognita.