



Class 12 Biology | Biotechnology And Its Applications

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. Bt cotton contains genes obtained from

- A. Bacillus thuringiensis
- B. Saccharomyces
- C. Plasmodium
- D. Rhizobium

2. Bt toxin is produced by the bacterium as an inactive

- A. Antibody
- B. Protoxin
- C. Steroid
- D. Nucleotide

3. In susceptible insects, Bt protoxin is activated mainly by

- A. Leaf chlorophyll
- B. Human insulin
- C. Strongly acidic blood
- D. Alkaline gut conditions

4. Activated Bt toxin kills susceptible insects chiefly by

- A. Stopping plant photosynthesis
- B. Forming pores in midgut cells
- C. Increasing insect haemoglobin
- D. Destroying the plant nucleus

5. Different cry genes are useful because their proteins

- A. All act only on viruses
- B. Contain no amino acids
- C. Kill every organism equally
- D. Target different insect groups

6. RNA interference silences a target by acting on its

- A. Whole chromosome number
- B. Lipid droplets
- C. Cellulose wall
- D. Complementary mRNA

7. Transgenic tobacco resistant to Meloidogyne uses

- A. Nitrogen-fixing nodules
- B. Human growth hormone
- C. Blood antibodies
- D. RNA interference

8. Mature human insulin consists of

- A. A and B chains linked by disulphide bonds
- B. Four identical chains
- C. One chain with C peptide retained
- D. Only C peptide

9. Recombinant insulin production avoids the need to extract insulin from

- A. Human sweat
- B. Animal pancreases
- C. Wheat roots
- D. Sea salt

10. Gene therapy for ADA deficiency aims to supply a functional

- A. Chlorophyll gene
- B. Haemoglobin pigment
- C. Bt toxin
- D. ADA gene

11. Repeated infusion of modified lymphocytes may be required because they

- A. Cannot contain DNA
- B. Have a limited lifespan
- C. Always become bacteria
- D. Produce no proteins

12. PCR helps early infection diagnosis by

- A. Removing all microbes
- B. Replacing vaccination
- C. Amplifying small amounts of pathogen nucleic acid
- D. Producing antibodies in the patient

13. ELISA relies principally on

- A. Water diffusion
- B. Specific antigen-antibody interaction
- C. ATP synthesis
- D. Random DNA pairing

14. A transgenic animal carries

- A. Only naturally inherited genes
- B. No chromosomes
- C. A plant cell wall
- D. An introduced foreign gene in its genome

15. Biopiracy involves

- A. All plant breeding
- B. Unauthorised exploitation of biological resources or traditional knowledge
- C. All public research
- D. Every vaccination programme

ANSWER KEY — check after completing all 15 questions

1.A 2.B 3.D 4.B 5.D 6.D 7.D 8.A 9.B 10.D 11.B 12.C 13.B 14.D 15.B