

## Biology - 12th Class Biology Chapter 23 Short Questions Preparation

Q1. What is cystic fibrosis?

**Ans 1:** In cystic fibrosis patient lack a gene that codes for transmembrane carrier of the chloride ions. Patient often die due to numerous infections of the respiratory tract.

Q2. What is gene pharming?

**Ans 1:** Gene pharming is a technology that scientists use to alter an animal's own DNA, or to splice in new DNA, called a transgene, from another species. In pharming these genetically modified animals are used mostly to make human proteins that have medicinal value.

Q3. Define biotechnology. Name two biotechnology products.

**Ans 1:** It is a technology in which chemical processes of living organisms can be used for the welfare of mankind. Its products are Insulin, Growth hormones

Q4. What are cumulus cells?

**Ans 1:** Cumulus cells are those cells which attached or cling to an egg after ovulation.

Q5. How gene therapy is carried out?

**Ans 1:** Gene therapy is the addition of new genes to a patient's cells to replace missing or malfunctioning genes. Researches typically do this using a virus to carry the genetic cargo into cells, because that's what viruses evolved to do with their own genetic material.

Q6. Name the salt tolerant plants and give its role in future.

**Ans 1:** Arabidopsis is salt tolerant plant. The cultivation of this plant at saline soil will reclaim the soil conditions. The acreage of the crop in a field will be increased in this way.

Q7. Differentiate between genome and probe.

**Ans 1: Genome:** A complete set of chromosomes which is haploid in number is called genome or a full set of genes of an individual is called genome

**Ans 2: Probe:** A probe is a single stranded nucleotide sequence that will hybridize into a certain piece of DNA.

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Q8. What are restriction enzymes? Give an example

**Ans 1:** The restriction enzymes cut down the viral DNA, but does not harm to the bacterial cell. They are called restriction enzymes because they restrict the growth of virus. ECORI is commonly used restriction enzyme.

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Q9. Why urine is preferable vehicle for biotechnology product?

**Ans 1:** Urine is preferable vehicle for biotechnology products because all the animals in the herd urinate-while only female produce milk. Animals start urinate at birth-females do not produce milk until maturity and it is easier to extract protein from urine than milk.

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Q10. Give difference between ex vivo and in vivo gene therapy.

**Ans 1: Ex vivo:** In ex vivo gene therapy bone marrow stem cells are removed from the body, healthy gene is inserted in them and they again introduced in the body.

**Ans 2: In vivo:** In in vivo gene therapy all this process is done in side body without removing stem cells from the body.

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