

Biology - 12th Class Biology Chapter 23 Short Questions Preparation

Q1. What are restriction enzymes? Who first isolated them?

Ans 1: These are natural enzymes of bacteria which they use for their own protection against viruses. The restriction viruses cut down the viral DNA, but does not harm to the bacterial chromosome. In 1970, Hamilton O. Smith isolated the first restriction enzyme.

Q2. What is Anther Culture?

Ans 1: Anther culture is a technique in which mature anthers are cultured in a medium containing vitamins and growth regulators. Anther culture is a direct way to produce plants that express recessive alleles. If the recessive alleles govern desirable traits, the plants have these traits.

Q3. How gene therapy has been used for the treatment of coronary artery angioplasty?

Ans 1: During coronary artery angioplasty, a balloon catheter is sometimes used to open up closed artery. The balloon catheter is coated with a plasmid that contains a gene for vascular endothelial growth factor. The expression of the gene which promotes the cell division of blood vessels to bypass the blocked area has been observed in at least one patient.

Q4. What are transgenic Bacteria?

Ans 1: Bacteria that have a foreign gene inserted into their bodies are termed as transgenic bacteria.

Q5. Define Transgenic Plants. Give its two uses.

Ans 1: Plants having foreign genes incorporated into their cells are known as transgenic plants. Two uses of transgenic plant are:

Ans 2: i) A weed called mouse-eared cress has been engineered to produce a biodegradable plastic in cell granules.
ii) Plants are being engineered to produce human hormones, clotting factors and antibodies in their seeds.

Q6. Write down two different methods in gene sequencing for generation of DNA fragments.

Ans 1: Gene sequencing can be done by

Ans 2: i) Maxam-Gillbert method
ii) Sanger's method

Q7. Give two goals of human genome project. Or What are two goals of human genome project?

Ans 1: The two main goals of human genome project are

Ans 2: i) To construct genetic map of human genome.
ii) To construct a base sequence map.

Q8. Give three possible ways to get the gene of interest. Write three methods to get gene of interest.

Ans 1: Gene of interest can be obtained by following methods

Ans 2: i. To isolate it from chromosomes
ii. Make it from mRNA
iii. Synthesize it chemically.

Q9. 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.

Q10. Write two uses of PCR.

Ans 1: i. It is used to make or clone of a gene
ii. PCR used for the purpose for diagnosis and monitoring of genetic diseases.
