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Semester: 4<sup>th</sup>

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Paper: Molecular Biology

Q:1 Fill in the blanks?

- 1) Denaturing ,Annealing and Extension.
- 2) Vaccinae
- 3) Yeast
- 4) Molecular scissors
- 5) Restriction map
- 6) DNA finger printing
- 7) Restriction Endonuclease methylase enzyme

Q:2 Write short note on the following

- 1) Vaccine and it's types
- 2) Biotechnology and its scope

Vaccine is a chemical substance which is used to produce and stimulate antibody and the antibody when produce it works like an antigen against a disease or several types of disease without inducing the disease. Vaccines basically have four types we discussed below.

**Types of vaccines**

- 1) Live attenuated vaccine
  - 2) Inactivated vaccine
  - 3) Conjugate vaccine also called subunit recombinant or polysaccharide vaccine
  - 4) Toxoid vaccine
- 3) Biotechnology and its scope.

Biotechnology is a technology which utilizes biological system and living organism or part of that develop new products . Biotechnology is using yeast and produce desired.

**Scope of Biotechnology**

is importance and impact. Biotechnology is the technology Applied to Biology, Molecular Biology and genetics biology. Biotechnology is utilizes cellular and bio cellular to create Technologies and products which help us to live the life.

Q:3 Explain Restriction and Modification System?

Ans:3 The restriction and Modification System also known as RM system. Which is found in bacteria and others prokaryotic organisms and provides a defense against foreign DNA such as by bacteriophages this prevents infection by destroying the foreign DNA induced by an infectious agent. Such as bacteriophages.

Q:4 What are the different types of restriction enzyme? Recombinant DNA technology and its applications?

Ans:4 The different types of restriction enzymes are basically four types are recognized and designated 1,2,3,4 different from one other on the basis of structure, cleavage, and cofactor.

#### **Recombinant DNA**

Recombinant DNA is formed when two different species DNA are combined together and inserted into an organism and new genetics are produced is known as Recombinant DNA that are valuable to medicine, agriculture etc.

#### **Technology and applications.**

Recombinant DNA applications also called genetics engineering or DNA Recombinant technology. Recombinant DNA technology is widely used in agriculture to create genetically modified organisms and produce Genetically modified crops producer prefer over traditional crops because they yield more and require less care.

Q:5 As a student of MLT how you will use restriction Endonuclease in the lab?

Ans:5 A restriction Endonuclease or restriction enzyme a protein produced by bacteria that cleaves DNA at specific sites along the molecules in the bacteria cells.

Restriction enzyme cleaves foreign DNA thus eliminating infection organisms. In this experience we will use restriction Endonuclease or restriction enzymes to cut up DNA from small viruses and this process will take 3-4 days. When you want to select an enzyme you want to choose that.

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