



**B. Sc. (MICROBIOLOGY) SEMESTER-V
Paper-II
(Molecular Biology and Bioinstrumentation)**

UNIT-I

Mutation and Types of Mutation:

<https://youtu.be/r13xjZWlohQ?si=2NfsX4gvWwTK9m5>

Regulation Of Gene Expression, Lac Operon:

<https://youtu.be/hvzWfNaIUW4?si=pSdydDXUFArZ-7os>

Negative Regulation of Lac Operon:

<https://youtu.be/uBJGBALu4P4?si=TvnVW3ZGnIUjZVC>

UNIT-II

General types of Recombination

<https://www.youtube.com/watch?v=Aehfc77hwss>

Transposable element I Types of Transposons I I DNA Transposons

<https://www.youtube.com/watch?v=IMULjePLP0M>

Transposable elements in prokaryotes and eukaryotes | Transposons and jumping genes

<https://www.youtube.com/watch?v=oY-WDa0gMtc>

UNIT-III

Spectroscopic Techniques and Application:

https://youtu.be/B2tPeoKgDKQ?si=IDQT8HXKObn_dSIE

Centrifugation and its Types:

<https://youtu.be/YSgfYWIPPTc?si=KBgHR1bzSgvfhz9D>



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SDS-Polyacrylamide Gel Electrophoresis (SDS-PAGE):

<https://youtu.be/S7NikBy38To?si=3STlZ34So9brik9t>

Spectroscopy | Beer - Lambert's Law:

<https://youtu.be/gGRMtq7hvHc?si=Y6KWLfb6CLHFxVaI>

SDS PAGE | Part 1 - Gel Preparation:

<https://youtu.be/vepxeDep6fk?si=kAwVrjS4lasTHm3O>

UNIT-IV

Types of Chromatography:

<https://youtu.be/zfueRm4Q0dU?si=LjnrYTQwCfXX6-QG>

Ion Exchange Chromatography | Principle, Instrumentation & Lab Experiment:

https://youtu.be/vMzs4NyVvuc?si=w_1jqNLlaUTSuWSX

Size Exclusion Chromatography | Lab Procedure:

https://youtu.be/bu0wm5swcJ0?si=vQO5x_BzYGvzQy4K

Geiger Muller Counter:

<https://youtu.be/ieEeFKrFBIg?si=JvUYWZzf0enaarg6>

What is a Scintillation Counter? Working of Scintillation Counter | Measurement of Radioactivity:

<https://youtu.be/QZ8uXhUNkiA?si=RE3FigVBc6CPDADK>

Transposons | Transposable Elements | Types of Transposons | How Transposons Work?

<https://youtu.be/VLRksFGhboo?si=gQEskezNdeVsTuzp>

Transposable Elements in Prokaryotes:

<https://youtu.be/HaZqeZ-8p4?si=YDnYzLMY6bH15SDQ>