

Lesson Plan-Mrs Manisha Sharma
B. Sc. Zoology hons.
SEMESTER – III
PAPER 3.2
Molecular Biology – I

JULY, 2018

Week 3 (July 16-21)

Introduction, **Nucleic Acids convey Genetic Information**
DNA as the carrier of genetic information,

AUGUST, 2018

Week 1 (July 30-August 4)

Key experiments establishing-The Central Dogma,

Week 2 (August 6-11)

DNA Double helix properties,

Week 3 (August 13-18)

Genetic code, Direction of Protein Synthesis,

Week 4 (August 20-25)

Direction of Protein Synthesis and Genomics.

Week 5 (August 27-30)

DNA Structure: Miescher to Watson and Crick- historic perspective,

SEPTEMBER, 2018

Week 1 (September 3-8)

The Structures of DNA and RNA / Genetic Material

DNA structure, Salient features of double helix,
Types of DNA,

Week 2 (September 10-15)

Types of genetic material, denaturation and renaturation, cot curves.

Week 3 (September 17-22)

DNA topology - linking number, topoisomerases; Organization of DNA- Prokaryotes, Viruses, Eukaryotes.
RNA Structure

Week 4 (September 24-29)

Organelle DNA - mitochondria and chloroplast DNA.

OCTOBER 2018

Week 1(October 1-6)

Genome Sequence and Chromosome Diversity, Chromosome Duplication and Segregation.

Week 2 (October 8-13)

Structure- Euchromatin, Heterochromatin- Constitutive AND Facultative heterochromatin

Week 3 (October 15-20)

Regulation of Chromatin Structure and Nucleosome Assembly

Week 4 (October 22-27)

Replication of DNA (Prokaryotes and Eukaryotes)

Chemistry of DNA synthesis, **The Mutability and Repair of DNA**

Replication Errors, DNA Damage and their repair.

NOVEMBER 2018

Week 1(October 29- November 3)

General principles - bidirectional replication, Semi-conservative, Semi discontinuous, RNA priming,

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Week 2 (November 5-10)

Various models of DNA replication including rolling circle, D-loop (mitochondrial), (theta) mode of replication,

Week 3 (November 12-17)

Replication of linear ds-DNA, replicating the 5'end of linear chromosome. Enzyme involved in DNA replication – DNA polymerases, DNA ligase, Primase, Telomerase and other accessory proteins

Week 4 (November 19-24)

Class tests and Revision

Lesson Plan-Mrs Manisha Sharma
B. Sc. Botany hons.(Subsidiary)
SEMESTER – 1
Zoology-I

JULY, 2018

Week 3 (July 16-21)

Protozoa General Characters and Reproduction

AUGUST, 2018

Week 1 (July 30-August 4)

Metazoa Origin of metazoan,

Porifera General characters

Week 2 (August 6-11)

Structural organization of *Sycon*

Week 3 (August 13-18)

Cnidaria General Characters

Week 4 (August 20-25)

Polymorphism in Cnidarians

Week 5 (August 27-30)

Polymorphism in Cnidarians

SEPTEMBER, 2018

Week 1 (September 3-8)

Platyhelminthes General Characters

Week 2 (September 10-15)

Fasciola: Structure and life history

Week 3 (September 17-22)

Aschelminthes General characters

Week 4 (September 24-29)

Life history of *Ascaris* and its parasitic adaptations.

OCTOBER 2018

Week 1(October 1-6)
Annelida General Characters and.

Week 2 (October 8-13)
Adaptive radiations in Polychaeta

Week 3 (October 15-20)
Arthropoda General Characters

Week 4 (October 22-27)
Larval forms of crustacea; metamorphosis in Insecta

NOVEMBER 2018

Week 1(October 29- November 3)
Mollusca General characters and Torsion and detorsion

Week 2 (November 5-10)
Echinodermata General Characters

Week 3 (November 12-17)
Water-vascular system and larval forms

