



**B. Sc. (Zoology) Semester III**

**Paper -II**

**(Genetics)**

**Unit -1**

Mendelian Principles

<https://www.youtube.com/watch?v=NWqgZUnJdAY&pp=ygUUTWVuZGVsaWFuIFByaW5jaXBsZXNM%3D>

Epistasis

[https://youtu.be/0HfkCpZLfo?si=MeTtf\\_lwCL\\_2Nwqm](https://youtu.be/0HfkCpZLfo?si=MeTtf_lwCL_2Nwqm)

Interaction of genes- Epistasis - dominant and recessive, codominance, incomplete dominance

<https://www.youtube.com/watch?v=YJHGfbW55l0&pp=ygU5ZG9taW5hbnQgYW5kIHJlY2Vzc2l2ZSwgY29kb2lpbmFuY2UsIGluY29tcGxldGUgZG9taW5hbmNI>

Quantitative genetics

<https://www.youtube.com/watch?v=b3K3ILdBmSA&pp=ygUVUXVhbnRpdGF0aXZlIGdlbmV0aWNz>

Extracellular genome

<https://www.youtube.com/watch?v=huRHMGoAdKo&pp=ygUURXh0cmFjZWxsdWxhciBnZW5vbWU%3D>

**Unit -2**

Cytoplasmic inheritance- Kappa particles in Paramecium, CO<sub>2</sub> sensitivity in Drosophila, milk factor in mice

<https://youtu.be/czcbdEXzNKI?si=E1TI0qSXbWRitlpU>

Linkage and crossing over – Basic concepts of linkage, types and theories

<https://youtu.be/8ttFkOQN6wo?si=W7JmhtaYIBqbntcJ>

Concepts of genes – Cistron, muton and recon Phenylketonurea

<https://youtu.be/3kKHHWxNovo?si=qLQAPAVqNVS4iUEz>

Genetic disorders in human beings – Haemoglobin disorders – Thalassemia and Sickle cell anemia. Metabolic disorder

[https://www.youtube.com/live/ePMkegIrWQc?si=cZl-Vpin\\_a44rb1H](https://www.youtube.com/live/ePMkegIrWQc?si=cZl-Vpin_a44rb1H)

**Unit -3**

Sex determination

<https://www.youtube.com/watch?v=AzkXQBzZEIE&pp=ygURU2V4IGRldGVybWluYXRpb24%3D>

Genic balance theory

[https://www.youtube.com/watch?v=Own\\_bnCwiKI&pp=ygUUR2VuaWMgYmFsYW5jZSB0aGVvcnk%3D](https://www.youtube.com/watch?v=Own_bnCwiKI&pp=ygUUR2VuaWMgYmFsYW5jZSB0aGVvcnk%3D)

Chromosomal aberrations

[https://www.youtube.com/watch?v=7\\_p14l8gPhk&pp=ygUXQ2hyb21vc29tYWwgYWJlcnJhdGlvbM%3D](https://www.youtube.com/watch?v=7_p14l8gPhk&pp=ygUXQ2hyb21vc29tYWwgYWJlcnJhdGlvbM%3D)



[https://www.youtube.com/watch?v=7\\_p14l8gPhk&pp=ygUnRGlzb3JkZXJzIHJlbGF0ZWQgdG8gY2hyb21vc29tYWwgbnVtYmVy](https://www.youtube.com/watch?v=7_p14l8gPhk&pp=ygUnRGlzb3JkZXJzIHJlbGF0ZWQgdG8gY2hyb21vc29tYWwgbnVtYmVy)

Gene mutations

<https://www.youtube.com/watch?v=mCOMD291oBM&pp=ygUOR2VuZSBtdXRhdGlvbnM%3D>

Disorders related to chromosomal number

<https://www.youtube.com/watch?v=WpVPapLdLC0&pp=ygUnRGlzb3JkZXJzIHJlbGF0ZWQgdG8gY2hyb21vc29tYWwgbnVtYmVy>

#### **Unit -4**

Lethal genes – Concepts and consequences

[https://youtu.be/d\\_rEdVSWp7g?si=iZYP6tennD23rZXj](https://youtu.be/d_rEdVSWp7g?si=iZYP6tennD23rZXj)

Population genetics: Basic concepts in population genetics, Hardy Weinberg equilibrium and its significance

[https://youtu.be/25c7XDLygFE?si=gnWdoq\\_UvtnMDTk6](https://youtu.be/25c7XDLygFE?si=gnWdoq_UvtnMDTk6)

Genetic counseling – Introduction , purpose, hereditary diseases and disorders

<https://youtu.be/pe7QijVKaOc?si=tM3zFQZOtGRyRPsu>

Applied genetics - DNA fingerprinting , amniocentesis, sperm banks, karyotyping

<https://youtu.be/hiJ5HUfXy4o?si=fCxrRCgpbw99BCal>