

**SHRI GOVIND GURU UNIVERSITY, GODHARA**  
**B.SC.ZOOLOGY SEM-I**  
**MULTI DISCIPLINARY COURSE (THEORY)**

**BS23MD1ZO1 : FUNDAMENTALS OF ZOOLOGY**

**(Credit 02)**

**UNIT: 1 Cytology**

- Ultra structure of a typical Animal cell,
- Ultra structure of Nucleus, Mitochondria, Endoplasmic reticulum, Eukaryotic Ribosome.

**UNIT:2 Genetics**

- Introduction to Genetics and gene
- Mendel's Law of Heredity
- Incomplete dominance (Gulbas plant-1:2:1), Co dominance (Coat color in Cattle - 1:2:1), Multiple alleles ABO Blood groups, Polygenic inheritance (Skin color in humans-1:4:6:4:1).

**UNIT:3 Molecular Biology**

- Molecular structure of DNA (Watson & Crick's Model)
- Molecular structure and types of RNA
- Light Microscope: (i) Simple (ii) Compound
- Electron Microscope (i) SEM (ii) TEM

**REFERENCES:**

1. ACell Biology and Molecular Biology, N. Arumugan, Saras Publications.
2. Cytology P.K.Gupta., S Chand & Co. Delhi.
3. Fundamental of Light Microscopy & Electron Imaging. Murphy D.B., Wiley Liss.
4. Microscopy and Microtechnique. R. Marimuthu, MJP Publishers.
5. Fundamentals of Genetics B.D.singh., Medtech Science Press.
6. Genetics, P.S. Verma & V.K. Agarwal, S.Chand& Co. Delhi

**B.SC.ZOOLOGY SEM-I**  
**MULTI DISCIPLINARY COURSE (PRACTICAL)**  
**FUNDAMENTALS OF ZOOLOGY**

1. Study of Cytology:

**(Credit 02)**

- (i) Typical Animal Cell
- (ii) Nucleus
- (iii) Mitochondria
- (iv) Endoplasmic Reticulum
- (v) Eukaryotic Ribosomes

2. Study of Genetics

- (i) Monohybrid Ratio 3 : 1
- (ii) Dihybrid Ratio 9 : 3 : 3 : 1
- (iii) Incomplete dominance 1 : 2 : 1
- (iv) Codominance (1:2:1)
- (v) Multiple Alleles - ABO Blood groups
- (vi) Polygenic inheritance 1 : 4 : 6 : 4 : 1 (skin color in man)

3. Study of molecular structure of DNA through chart and model.

4. Study of Microscopes:

- (i) Light microscope - (1) Simple (2) Compound
- (ii) Electron microscope (1) SEM (2) TEM