

## **Lecture Objectives (Foundation Module)**

### **Genetics**

#### **1. Replication of DNA**

At the end of lecture student will be able to:

1. Explain Organization of Eukaryotic DNA on Chromosomes as Chromatin..
2. Define replication.
3. Explain why exactly same types of new DNA molecules must be synthesized.
4. Explain DNA replication is semi conservative
5. Explain Unwinding of DNA.
6. Enumerate the requirements for replication
7. Explain Coordinated Interplay of several Proteins and Enzymes
8. Explain the process of replication
9. Justify that replication is a flawless process (proofreading activity).

#### **2. DNA Damage and Repair**

At the end of lecture student will be able to:

1. Define DNA damage.
2. Enumerate causes of DNA Damage.
3. Explain of DNA Damage.
4. Explain Consequences of DNA Damage
5. Enumerate hereditary Disorders Caused Due to DNA Damage (Mutation)
6. Define DNA repair.
7. Explain types of Repair Systems.
8. Explain the processes of repair in DNA replication and relate this with disease processes like xeroderma pigmentosa.
9. Explain consequences of Repair Failure.