

# GENERAL TYPES OF TOXICOLOGY:

- Analytical toxicology
- Applied toxicology
- Clinical toxicology
- Veterinary toxicology
- Forensic toxicology
- Environment toxicology
- Industrial toxicology

- **Analytical toxicology:**
- It is the branch of toxicology which deals with the study of detection and assay of poisonous chemicals including their metabolites that could affect the biological system.
  
- **Applied toxicology:**
- It is the application of new and modern methods or technologies for early detection of toxicants in the field setting or practice area.

- **Clinical toxicology:**

- It is mainly involved in the study of diagnosis and treatment of poisoning that can occur in humans.

- **Veterinary toxicology:**

- Veterinary toxicology focus in the study of diagnosis and treatment of animal poisoning including the transmission of toxin from animals to humans via milk, meat, fish, food stuff and etc.

- **Environmental toxicology:**
- It is the branch of toxicology in which study of presence of different toxicants including their metabolites and degradation products in the environment and their effects on humans and animals.
  
- **Industrial toxicology:**
- It is the study of selective and specific area of environmental toxicology.

# **THE MAJOR AREAS OF SPECIALIZATION IN TOXICOLOGY :**

- Mechanistic toxicology (basic biology and chemistry)
- Regulatory toxicology (rule making and compliance)
- Descriptive toxicology (testing)

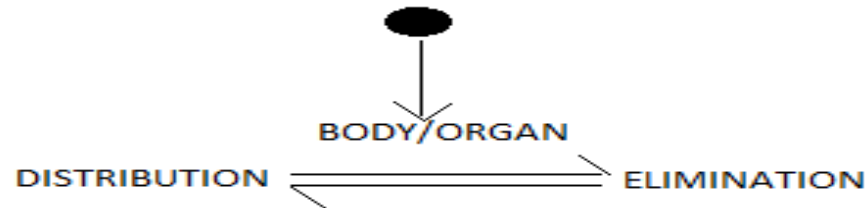
# MECHANISTIC TOXICOLOGY:

- It is a branch of toxicology that focuses on how the cellular, biochemical, and molecular mechanisms of chemicals exert toxic effects on living organisms and how the biological system protects themselves against these adverse effects.
- It aims at identifying the molecular events that lead from initial exposure to the chemical to the ultimate manifestation of toxic injury in an organism.

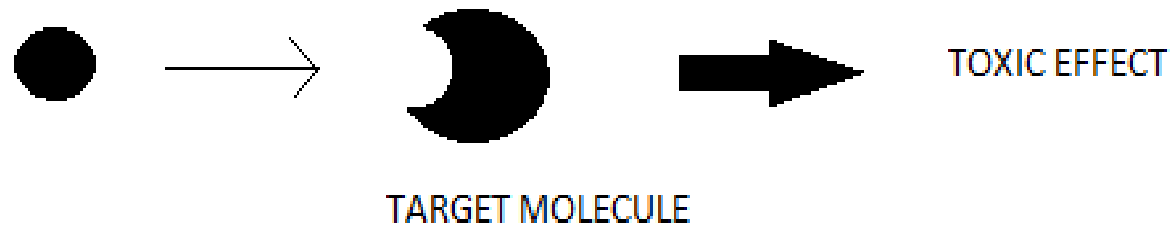
## **IT ADDRESSES A NUMBER OF FUNDAMENTAL QUESTIONS.**

- How do xenobiotics enter an organism and how are they distributed and metabolized?
- How do xenobiotics interact with target molecules?
- How do xenobiotics exert their toxic effects at the molecular level?
- What are the downstream biological consequences?

# MECHANISMS OF TOXICITY CAN BE STUDIED



2.



3.

