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# 16BT451 DRUG TOXICITY EVALUATION

## UNIT-I

**BASIC PRINCIPLES OF TOXICOLOGY:** Introduction to toxicology; Pharmacological principle, mechanisms- receptor mediated vs. reactive intermediate mediated toxicity; Reactive oxygen species; modulators of toxicity- pharmacological factors, physiological factors and pathophysiological factors; ,toxicological evaluation.

## UNIT - II

**Toxins:** Chemical carcinogens/radiation; Alcohols/analgesics; Pulmonary/Inhalation toxicants; health risk of tobacco and marijuana; Pychostimulants/antidepressants; Pesticides; Bacterial, insect and snake toxins; Heavy metals; Ozone and nanoparticles.

## UNIT-III

**EFFECTS OF TOXINS:** Biotransformation of xenobiotics; Chemical carcinogenesis, genetic toxicology, neurotoxicology, molecular toxicology, reproductive toxicology, teratology and toxicogenomics; Understanding the role of cytochrome P450.

## UNIT - IV

**EVALUATION OF TOXINS:** Dose-response and toxicity testing; Toxicokinetics; Risk assessment; Biomarkers of exposure and susceptibility factors; Food safety; Methods of evaluation-animal cell tines, *Caenorhabditis elegans* and animal models (mice, rabbit).

## UNIT - V

**REGULATIONS:** Central Pollution Control Board (CPCB), Food and Drug Administration (FDA), Environmental Protection Agency (EPA); Impact of toxins on environment, biodiversity and population; Drug regulatory affairs: National and international regulatory aspects; Total quality management; QC and QA.