

# Toxicology

<b>Question # 1</b>	Define Ecotoxicology
<b>Options</b>	<p><b>A</b> An area of professional emphasis within the realm of medical science concerned with diseases caused by toxic substances</p> <p><b>B</b> A Hybrid of analytical chemistry and fundamental toxicologic principles</p> <p><b>C</b> A study focuses on the impacts of chemical pollutant found in the environment on biological organism</p> <p><b>D</b> A specialized area within environmental toxicology that focuses more specifically on the impacts of toxic substances on population dynamics within an ecosystem</p>
<b>Correct Option</b>	<b>D</b>
<b>Explanation</b>	<p><b>Clinical Toxicology</b> - An area of professional emphasis within the realm of medical science concerned with diseases caused by toxic substances</p> <p><b>Forensic toxicology</b> - A Hybrid of analytical chemistry and fundamental toxicologic principles</p> <p><b>Environmental toxicology</b> - A study focuses on the impacts of chemical pollutant found in the environment on biological organism</p> <p><b>Ecotoxicology</b> - A specialized area within environmental toxicology that focuses more specifically on the impacts of toxic substances on population dynamics within an ecosystem</p>

# Toxicology

<b>Question # 2</b>	Acute exposure to Benzene primary causes
<b>Options</b>	<p>A CNS Depression</p> <p>B Leukaemia</p> <p>C Lung Cancer</p> <p>D Both A &amp; B</p>
<b>Correct Option</b>	<b>A</b>
<b>Explanation</b>	<p>Acute exposure to benzene leads to CNS depression as a primary effect. Repeated exposure for prolonged time results in Leukaemia.</p> <p>Leukaemia - A cancer of blood-forming tissues, hindering the body's ability to fight infection. Leukaemia is a blood cancer caused by a rise in the number of white blood cells in the body.</p> <p>Leukaemia is cancer of blood-forming tissues, including bone marrow</p>

## Toxicology

<b>Question # 3</b>	Repeated exposure to a chemical for one month to three months is categorized as
<b>Options</b>	<p><b>A</b> Subchronic exposure</p> <p><b>B</b> Subacute exposure</p> <p><b>C</b> Chronic exposure</p> <p><b>D</b> Acute exposure</p>
<b>Correct Option</b>	<b>A</b>
<b>Explanation</b>	<p>Subacute exposure refers to exposure for one month or less</p> <p>Subchronic exposure refers to exposure for one month to three months</p> <p>Chronic exposure refers to exposure for more than three months</p> <p>Acute exposure refers to exposure for less than 24 hours</p>

## Toxicology

**Question # 4** Which target organ is affected by systemic effects of Tetraethyl lead?

- Options**
- A Lungs
  - B Liver
  - C Central nervous system
  - D None of the above

**Correct Option** **C**

**Explanation**

Tetraethyl lead is absorbed by skin and then is transported systemically to produce its typical effects on the central nervous system

Systemic effects requires absorption and distribution of the toxicant from its entry point to a distant site at which deleterious effects are produced.

## Toxicology

<b>Question # 5</b>	Functional antagonism is defined as
<b>Options</b>	<p><b>A</b> Two chemicals counterbalance each other by producing opposite effects on the same physiological function</p> <p><b>B</b> A chemical reaction between two compounds to produce a less toxic product</p> <p><b>C</b> The situation in which disposition, that is, the absorption, biotransformation, distribution or excretion of the chemical is altered such that the concentration and duration of the chemical at the target organ is diminished</p> <p><b>D</b> Two chemicals that binds to the same receptor produce less of an effect when given together than the addition of their separate effects.</p>
<b>Correct Option</b>	<b>A</b>
<b>Explanation</b>	<p><b>Functional Antagonism</b> - Two chemicals counterbalance each other by producing opposite effects on the same physiological function</p> <p><b>Chemical Antagonism</b> - A chemical reaction between two compounds to produce a less toxic product. E.g. dimercaprol chelates with various metal ions (arsenic, lead) and decreases it's toxicity.</p> <p><b>Dispositional Antagonism</b> - The situation in which disposition, that is, the absorption, biotransformation, distribution or excretion of the chemical is altered such that the concentration and duration of the chemical at the target organ is diminished</p> <p><b>Receptor Antagonism</b> - Two chemicals that binds to the same receptor produce less of an effect when given together than the addition of their separate effects. E.g. Naloxone is used for treatment of morphine which causes respiratory depressive effects.</p>