

Final Evaluation

1. General rule of thumb for apoptosis is that it is more commonly seen at higher levels of toxicant exposure while necrosis occurs more frequently at relatively lower levels of toxicant exposure. *True or False?*

True

False

Answer

False

2. Neoantigen formation results when a xenobiotic or its metabolite binds to a larger protein to form a novel molecule that elicits an immune response. Molecules that trigger this immune response are called:

Haptens

Free radicals

Electrophils

Poisons

Answer

Haptens

3. Lipid peroxidation occurs when an _____ compound steals an electron from a membrane phospholipids resulting in the production of a fatty acid radical.

Electrophobic

Hydroxyl radical

Electrophilic

Hydrophilic

Answer

Electrophilic

4. Electron transfer can result in oxidation of some endogenous macromolecules and formation of _____ such as superoxide ion ($\bullet\text{O}_2^-$) and hydroxyl radical ($\text{HO}\bullet$).

Enzymes

Hormones

Free radicals

Proteins

Answer

Free radicals

5. Upon exposure of human skin with leaves of poison ivy, the toxin found in this plant binds to membranes on skin cells to stimulate an immune response resulting in blistering rash. This toxin is known as:

Urushiol

Ricin

Tetrodotoxin

Pyrethrins

Answer

Urushiol

6. Which of the following covalently binds to the acetaminophen metabolite N-Acetyl-P-Benzoquinone Imine (NAPQI) to detoxify it?

- N-acetylcysteine
- Superoxide dismutase
- Catalase
- Amylase

Answer

N-acetylcysteine

7. Differences between Necrosis and Apoptosis include the following EXCEPT:

- Necrosis is a degenerative process while Apoptosis is an active process
- Necrosis triggers inflammatory response while Apoptosis does not incite inflammatory response
- Necrosis results in loss of energy while Apoptosis does not result in loss of energy
- Necrosis is an active process while Apoptosis is a degenerative process

Answer

Necrosis is an active process while Apoptosis is a degenerative process

8. A regenerative response that results in an increase in cell size is termed ____.

- Hypertrophy
- Hypoplasia
- Hyperplasia
- Atrophy

Answer

Hypertrophy

9. ____ helps to terminate lipid peroxidation when present in sufficient quantities.

- Vitamin E
- Hydroxyl radical
- Vitamin A
- Oxygen

Answer

Vitamin E

10. An “adduct” is the product of an irreversible bond between the toxicant and target molecule; this type of binding is known as:

- Noncovalent binding
- Covalent binding
- Hydrogen abstraction
- Ionic binding

Answer

Covalent binding

11. An example of decreasing the reactivity of a target site to a toxicant is describe as:

- Binding of toxicant to target receptors
- Downregulation of toxicant target receptors
- Increased metabolism of alcohol within the stomach and liver
- Stimulation of membrane receptors

Answer

Downregulation of toxicant target receptors

12. 10% of acetaminophen bioactivated by Cytochrome P450 in the liver to a toxic metabolite is called:

- Superoxide dismutase
- N-acetylcysteine
- N-acetyl-P-Benzoquinone Imine (NAPQ1)
- Superoxide ion

Answer

N-acetyl-P-Benzoquinone Imine (NAPQ1)

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