

Addiction Science in the Natural World

Addiction Science · Answer Key · 8 Questions

1. Certain species of monkeys, such as capuchin monkeys, have been observed to seek out and consume fermented fruit. What is the primary psychoactive compound in fermented fruit that can influence their behavior?

- A) Caffeine
- B) Nicotine
- C) Ethanol**
- D) Morphine

2. Birds in the Amazon rainforest are known to consume clay from certain riverbanks. This behavior is believed to help them neutralize toxins found in their diet. What class of toxins do these clay-rich diets primarily help to mitigate?

- A) Heavy metals
- B) Pesticides
- C) Plant alkaloids**
- D) Radioactive isotopes

3. Dopamine, a key neurotransmitter in the brain's reward pathway, is also involved in natural reward processes in animals. Which of the following natural stimuli is known to reliably increase dopamine release in many animal species?

- A) Cold temperatures
- B) Social isolation
- C) Ingestion of palatable food**
- D) Prolonged sleep

4. The practice of 'leaf grooming' by chimpanzees, where they chew on specific leaves and then swallow them, is thought to have a medicinal purpose. What common intestinal parasite do these leaves help to expel?

- A) Tapeworms
- B) Roundworms**
- C) Protozoa
- D) Fungal spores

5. Some insects, like the tobacco hornworm, can sequester nicotine from tobacco plants they feed on. This sequestration serves as a defense mechanism. What does the sequestered nicotine primarily protect them from?

- A) Dehydration
- B) Predation by birds**
- C) UV radiation
- D) Fungal infections

6. Dopamine pathways are fundamental to reward and motivation. In a natural context, what environmental factor is strongly associated with increased dopamine release, driving exploration and learning in animals?

- A) Predictable weather patterns
- B) Abundant, easily accessible food sources
- C) Novelty and environmental exploration**
- D) Constant, unchanging habitats

7. Certain fungi produce psychoactive compounds. Psilocybin, found in 'magic mushrooms,' is structurally similar to which naturally occurring neurotransmitter that plays a role in mood and perception?

- A) GABA
- B) Dopamine
- C) Serotonin**
- D) Norepinephrine

8. The 'opioid crisis' has devastating human consequences. Opioids are derived from natural sources. Which plant is the primary source of opium, from which morphine and codeine are extracted?

- A) Coca plant
- B) Cannabis plant
- C) Opium poppy**
- D) Tobacco plant