

# ACVPM Toxicology Practice Exam (Sample)

## Study Guide



**Everything you need from our exam experts!**

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# Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

**Remember:** successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

# How to Use This Guide

**This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:**

## **1. Start with a Diagnostic Review**

**Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.**

## **2. Study in Short, Focused Sessions**

**Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.**

## **3. Learn from the Explanations**

**After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.**

## **4. Track Your Progress**

**Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.**

## **5. Simulate the Real Exam**

**Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.**

## **6. Repeat and Review**

**Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.**

**There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!**

## Questions

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- 1. Dioxin toxicity is known to affect multiple organ systems. Which functions are commonly impacted?**
  - A. Adrenocortical function, thyroid, immunity, teratogenesis, and carcinogenesis (liver)**
  - B. Only renal function**
  - C. Neurologic function only**
  - D. Cardiovascular function only**
  
- 2. Which statement best describes mercury forms and absorption?**
  - A. Organic mercury forms are lipophilic and readily absorbed; elemental and inorganic forms are less**
  - B. Elemental mercury is best absorbed**
  - C. Inorganic mercury salts are lipophilic**
  - D. All mercury forms are equally absorbed**
  
- 3. Which practice reduces nitrate content in stored forages?**
  - A. Drying in sun**
  - B. Harvest before flowering**
  - C. Ensiling (anaerobic fermentation reduces nitrate to nitrite)**
  - D. Applying nitrate-based fertilizer**
  
- 4. M1 is a metabolite of which aflatoxin and found in milk?**
  - A. B2**
  - B. G1**
  - C. G2**
  - D. B1**
  
- 5. Which plant is known for thiaminase activity causing neurological signs in horses?**
  - A. azalea (rhododendron)**
  - B. perilla (perilla)**
  - C. bracken fern (pteridium)**
  - D. lily of the valley (convallaria)**

- 6. Which statement best describes the clinical signs associated with oil exposure?**
- A. Crude oil causes GI signs; refined products cause neuro, cardio, and pulmonary signs**
  - B. Crude oil causes dermatologic signs; refined products cause renal signs**
  - C. Crude oil causes GI signs; refined products cause neuro, cardio, and pulmonary signs**
  - D. Crude oil causes neuro signs; refined products cause GI signs**
- 7. Which plant is associated with hematopoietic depression?**
- A. bracken fern (pteridium)**
  - B. onions and garlic (allium)**
  - C. oak (quercus)**
  - D. daylily (hemerocallis)**
- 8. FDA considers aflatoxin in milk to be a regulatory violation.**
- A. Not Regulated in Milk**
  - B. Regulated Only During Drought**
  - C. True**
  - D. False**
- 9. What are the clinical signs of chromium poisoning?**
- A. Dermal, Respiratory, and GI**
  - B. Neurological signs only**
  - C. Cardiac and hepatic signs**
  - D. Renal and ocular signs**
- 10. Ionophores used in poultry are polyethers produced by which organism?**
- A. Streptomyces avermitilis**
  - B. Streptomyces coelicolor**
  - C. Streptomyces griseus**
  - D. Streptomyces cinnamomensis**

## Answers

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1. A
2. A
3. C
4. D
5. C
6. C
7. A
8. C
9. A
10. D

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## **Explanations**

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**1. Dioxin toxicity is known to affect multiple organ systems. Which functions are commonly impacted?**

- A. Adrenocortical function, thyroid, immunity, teratogenesis, and carcinogenesis (liver)**
- B. Only renal function**
- C. Neurologic function only**
- D. Cardiovascular function only**

Dioxin toxicity acts through activation of the aryl hydrocarbon receptor, which changes the expression of many genes involved in hormone signaling, immune function, development, and cell growth. This broad action leads to disruptions across multiple organ systems rather than a single target. Endocrine disruption can affect adrenal steroid production and thyroid hormone homeostasis, altering metabolism and development. Immune function is impaired, weakening host defenses and antibody responses. Developmental effects are seen if exposure occurs during pregnancy, reflecting teratogenic potential. Carcinogenesis is also a concern, with dioxin linked to cancer risk, and the liver is a key target organ because it metabolizes xenobiotics and responds strongly to AhR signaling. Because dioxin touches endocrine pathways, immune competence, development, and cancer risk, the most comprehensive answer lists these diverse functions. The other options imply toxicity limited to one organ system, which doesn't capture the full spectrum of dioxin's effects.

**2. Which statement best describes mercury forms and absorption?**

- A. Organic mercury forms are lipophilic and readily absorbed; elemental and inorganic forms are less**
- B. Elemental mercury is best absorbed**
- C. Inorganic mercury salts are lipophilic**
- D. All mercury forms are equally absorbed**

Mercury comes in forms that behave very differently in the body because of their chemical properties, especially lipophilicity. Organic mercury compounds are highly lipophilic, so they cross cell membranes easily and are absorbed efficiently after ingestion. In contrast, elemental mercury is not readily absorbed from the gastrointestinal tract, though it is absorbed well when inhaled as vapor through the lungs. Inorganic mercury salts are not lipophilic, so they pass into the bloodstream poorly when swallowed and are less readily absorbed orally. This combination—organic forms being readily absorbed due to lipophilicity, with elemental and inorganic forms showing much lower oral absorption—best describes how mercury forms differ in absorption and helps explain differences in exposure risk and toxicokinetics.

### 3. Which practice reduces nitrate content in stored forages?

- A. Drying in sun
- B. Harvest before flowering
- C. Ensiling (anaerobic fermentation reduces nitrate to nitrite)**
- D. Applying nitrate-based fertilizer

Ensiling reduces nitrate content because the anaerobic fermentation environment drives microbial transformations that convert nitrates into nitrite and then into ammonia. When forage is packed tightly for silage, lactic acid bacteria thrive and produce lactic acid, lowering the pH and creating oxygen-free conditions. In this acidic, anaerobic setting, bacteria use nitrate as an electron acceptor, first reducing it to nitrite, and then further reducing nitrite to ammonium. This sequence lowers the nitrate pool available in the stored forage, decreasing potential nitrate exposure to ruminants. Nitrite can appear transiently, but the overall nitrate content declines with proper ensiling. Drying in the sun is an aerobic process and does not reliably decrease nitrate levels in stored forage. Harvesting before flowering and applying nitrate-based fertilizer tend to maintain or increase nitrate content rather than reduce it, so they aren't effective for lowering nitrates.

### 4. M1 is a metabolite of which aflatoxin and found in milk?

- A. B2
- B. G1
- C. G2
- D. B1**

Aflatoxin M1 in milk comes specifically from exposure to aflatoxin B1. When animals ingest B1, the liver metabolizes it and one of the detoxified products is aflatoxin M1, which is more water-soluble and excreted in milk. This is why milk can contain M1 after cows consume feed contaminated with B1. The other aflatoxins (B2, G1, G2) have different metabolic pathways and do not produce M1 as their characteristic milk metabolite. So the presence of M1 in milk points to aflatoxin B1 exposure.

### 5. Which plant is known for thiaminase activity causing neurological signs in horses?

- A. azalea (rhododendron)
- B. perilla (perilla)
- C. bracken fern (pteridium)**
- D. lily of the valley (convallaria)

Bracken fern stands out because it contains thiaminase, an enzyme that destroys thiamine (vitamin B1). Thiamine is essential for brain energy metabolism; when it's depleted, neurons can't get the glucose they need, leading to neurological dysfunction. In horses that ingest bracken for a period, this manifests as instability and incoordination described as staggers, with signs like ataxia, tremors, hind-limb weakness, and altered micturition in some cases. Other plants listed have different toxic constituents and produce signs not tied to thiamine deficiency, so they don't cause the same thiaminase-driven neurologic picture in horses. If bracken exposure is suspected, stopping intake and providing thiamine supplementation can help mitigate the deficiency and improve outcome with supportive care.

**6. Which statement best describes the clinical signs associated with oil exposure?**

- A. Crude oil causes GI signs; refined products cause neuro, cardio, and pulmonary signs**
- B. Crude oil causes dermatologic signs; refined products cause renal signs**
- C. Crude oil causes GI signs; refined products cause neuro, cardio, and pulmonary signs**
- D. Crude oil causes neuro signs; refined products cause GI signs**

The key idea is how the composition and volatility of an oil product influence where injury occurs. Crude oil is less refined and tends to irritate the GI tract when ingested or contaminated, so you see gastrointestinal signs such as vomiting and abdominal upset. Refined petroleum products are more volatile and easier to aspirate or absorb systemically, so they can cause a range of signs beyond the gut—neurologic effects (like dizziness or CNS depression), cardiovascular effects, and pulmonary injury from chemical pneumonitis or aspiration. This combination—GI signs with crude oil and neuro, cardiac, and pulmonary signs with refined products—best fits the typical clinical pattern seen with oil exposures. Dermal or renal signs are not the primary acute pattern for these substances, and crude oil does not characteristically present with primary neuro signs, nor do refined products typically cause only GI signs.

**7. Which plant is associated with hematopoietic depression?**

- A. bracken fern (pteridium)**
- B. onions and garlic (allium)**
- C. oak (quercus)**
- D. daylily (hemerocallis)**

Hematopoietic depression means the bone marrow is suppressed, leading to reduced production of red cells, white cells, and platelets. Bracken fern contains toxins such as ptaquiloside that damage rapidly dividing cells in the bone marrow, producing bone marrow suppression and often resulting in anemia, increased infection risk, and hemorrhage due to low platelet counts. That direct effect on the marrow makes it the plant most closely associated with hematopoietic depression. Onions and garlic cause oxidative damage to red blood cells leading to hemolytic anemia rather than bone marrow suppression. Oak is more linked to renal (kidney) toxicity, and daylily toxicity in cats primarily causes kidney failure.

**8. FDA considers aflatoxin in milk to be a regulatory violation.**

- A. Not Regulated in Milk
- B. Regulated Only During Drought
- C. True**
- D. False

Aflatoxins are toxic compounds produced by certain molds, and in dairy you're concerned with aflatoxin M1 that can appear in milk after cows consume feed contaminated with aflatoxin B1. The FDA has a strict regulatory action level for aflatoxin M1 in milk—0.5 parts per billion. If milk exceeds this limit, regulatory actions are taken to protect public health. That's why the statement is true: aflatoxin in milk is indeed a regulatory violation. This regulatory stance applies regardless of drought conditions; it's about the measured level of AFM1 in milk and the approved safety threshold.

**9. What are the clinical signs of chromium poisoning?**

- A. Dermal, Respiratory, and GI**
- B. Neurological signs only
- C. Cardiac and hepatic signs
- D. Renal and ocular signs

Chromium poisoning most often shows effects in the skin, lungs, and gastrointestinal tract because exposure routes include skin contact, inhalation, and ingestion. Dermal exposure commonly causes dermatitis at contact sites from irritant chromium compounds. Inhalation of chromium compounds, especially hexavalent chromium, irritates the airways and can produce cough, wheeze, and bronchitis. Ingestion or ingestion-related exposure leads to gastrointestinal symptoms such as nausea, vomiting, abdominal pain, and sometimes diarrhea. While chromium can affect other organs with longer or higher exposures (including kidneys or liver in some cases), the classic acute presentation centers on skin involvement, respiratory irritation, and GI upset. The other options describe systems that are not the primary or most characteristic signs of chromium poisoning.

**10. Ionophores used in poultry are polyethers produced by which organism?**

- A. *Streptomyces avermitilis*
- B. *Streptomyces coelicolor*
- C. *Streptomyces griseus*
- D. *Streptomyces cinnamonensis***

Ionophores are polyether antibiotics that work by forming ion-selective complexes and shuttling ions across cellular membranes, disrupting ion gradients in target organisms like protozoa and certain bacteria. The well-known poultry ionophores, including monensin, are produced by *Streptomyces cinnamonensis*. This organism is specifically associated with the synthesis of these polyether compounds used as coccidiostats and growth promoters in poultry. While other *Streptomyces* species produce different antibiotics, the polyether ionophores used in poultry originate from *Streptomyces cinnamonensis*.

## Next Steps

**Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.**

**As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.**

**If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at [hello@examzify.com](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://acvpmtotoxicology.examzify.com>**

**We wish you the very best on your exam journey. You've got this!**

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