

# Dual Enrollment Environmental Science 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. Which statement correctly describes Type II survivorship?**
  - A. The death rate is constant over the organism's life span**
  - B. The death rate is highest at birth**
  - C. The death rate declines with age**
  - D. The death rate increases with age**
  
- 2. An age structure diagram is best described as what?**
  - A. A visual representation of the number of individuals within specific age groups for a country, typically expressed for males and females**
  - B. It shows population growth rates with their shape**
  - C. A diagram showing weather patterns in a region**
  - D. A map of migratory routes**
  
- 3. Effects of Three Mile Island, Chernobyl, Fukushima include**
  - A. No impact on public health**
  - B. Immediate global evacuation of all residents**
  - C. Reduction in energy prices worldwide**
  - D. Public apprehension and stronger safety practices**
  
- 4. Which substance can substitute for ozone-depleting chemicals?**
  - A. Hydrofluorocarbons**
  - B. Chlorofluorocarbons themselves**
  - C. Ammonia**
  - D. Sulfur hexafluoride**
  
- 5. What are some effects of noise pollution in animals?**
  - A. Increased reproduction and longer lifespan**
  - B. Improved hearing sensitivity**
  - C. Stress, masking of sounds used to hunt or communicate, damaged hearing, changes in migratory routes**
  - D. None of the above**

- 6. Waterlogging is best described as:**
- A. A form of soil degradation that occurs when soil is compacted by heavy machinery.**
  - B. A form of soil degradation that occurs when soil remains under water for prolonged periods, raising groundwater levels and inhibiting root oxygen uptake.**
  - C. Erosion caused by wind.**
  - D. Nutrient leaching due to heavy rainfall.**
- 7. Which factor is associated with infant mortality rates?**
- A. Average rainfall**
  - B. Education level**
  - C. Urbanization**
  - D. Whether mothers have access to good healthcare and nutrition**
- 8. If a population grows at 2% per year, approximately how many years to double according to Rule of 70?**
- A. 35 years**
  - B. 70 years**
  - C. 140 years**
  - D. 7 years**
- 9. In the demographic transition model, which stage is characterized by high birth rates and high death rates?**
- A. Preindustrial**
  - B. Industrial**
  - C. Postindustrial**
  - D. Transitional**
- 10. Acid rain/deposition**
- A. Produced by nitrogen oxides and sulfur oxides from man-made and natural resources**
  - B. Produced by chlorofluorocarbons**
  - C. Created by water vapor alone**
  - D. Does not occur naturally**

## Answers

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

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## **Explanations**

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1. Which statement correctly describes Type II survivorship?

- A. The death rate is constant over the organism's life span**
- B. The death rate is highest at birth**
- C. The death rate declines with age**
- D. The death rate increases with age**

Type II survivorship means a constant mortality rate across the life span. In these populations, the chance of dying in a given time period is about the same no matter how old the individual is, so the number of survivors declines steadily with age. This is different from patterns where many die early in life (Type III) or where mortality increases sharply with age (Type I). Some birds, small mammals, and certain reptiles are examples that can show this constant-risk pattern. The statement that the death rate is constant over the organism's life span best captures what Type II represents.

2. An age structure diagram is best described as what?

- A. A visual representation of the number of individuals within specific age groups for a country, typically expressed for males and females**
- B. It shows population growth rates with their shape**
- C. A diagram showing weather patterns in a region**
- D. A map of migratory routes**

An age structure diagram, often called a population pyramid, shows how many people are in each age group within a country, with separate bars for males and females. This layout highlights the population's composition across ages, so you can see whether there are many children, a large working-age group, or a large elderly population. The shape of the diagram can indicate potential future trends in growth or decline—broad bases suggest potential rapid growth, while top-heavy shapes imply aging and possible stabilization or decline. It's not meant to depict weather patterns or migratory routes, and while the distribution by age relates to how fast a population might grow, the defining feature is the age-and-sex distribution.

3. Effects of Three Mile Island, Chernobyl, Fukushima include

- A. No impact on public health**
- B. Immediate global evacuation of all residents**
- C. Reduction in energy prices worldwide**
- D. Public apprehension and stronger safety practices**

These events show how major nuclear accidents shape society by shaking public confidence and pushing for tougher safety measures. After these incidents, people became more wary of nuclear power, and governments and international bodies strengthened safety standards, emergency planning, and regulator oversight. The disasters revealed the importance of robust defense-in-depth, better operator training, improved containment features, and more transparent risk communication, leading to widespread reforms in how reactors are designed, operated, and monitored. While health impacts did occur, and evacuations were limited to affected regions rather than worldwide, the lasting, common consequence highlighted here is the combination of public apprehension and the drive for stronger safety practices. The other options don't fit because they contradict the visible health effects, the localized nature of evacuations, or the reality that energy prices did not universally drop as a result of these incidents.

**4. Which substance can substitute for ozone-depleting chemicals?**

- A. Hydrofluorocarbons**
- B. Chlorofluorocarbons themselves**
- C. Ammonia**
- D. Sulfur hexafluoride**

Substituting ozone-depleting chemicals relies on choosing substances that don't release chlorine or bromine into the atmosphere, because those elements drive the breakdown of stratospheric ozone. Hydrofluorocarbons fit this need well—they were designed to replace chlorofluorocarbons by providing similar performance in applications like refrigeration and foam production while not containing chlorine or bromine, so they don't contribute to ozone depletion. In contrast, chlorofluorocarbons themselves are the very substances that harm the ozone layer, so they aren't substitutes. Ammonia isn't a standard substitute in many ozone-depleting contexts due to toxicity and other handling concerns, and sulfur hexafluoride is mainly used for electrical insulation and also isn't a typical substitute for the kinds of ozone-depleting chemicals in consumer products, even though it doesn't deplete ozone.

**5. What are some effects of noise pollution in animals?**

- A. Increased reproduction and longer lifespan**
- B. Improved hearing sensitivity**
- C. Stress, masking of sounds used to hunt or communicate, damaged hearing, changes in migratory routes**
- D. None of the above**

Noise pollution affects animals by introducing loud, persistent sounds that disrupt how they live and survive. It triggers physiological stress, with elevated stress hormones that can influence health, reproduction, and immune function. It also masks important acoustic signals animals rely on to hunt, detect predators, defend territories, or communicate with mates, making it harder to hear and respond to cues in the environment. Loud noises can physically damage hearing, reducing the ability to perceive sounds over time. In addition, animals may change where they go and how they move to avoid noisy areas, which can alter migratory routes and timing in ways that affect feeding and breeding. This combination of stress, masking, hearing damage, and altered movement aligns with the observed impacts of noise pollution on animals.

**6. Waterlogging is best described as:**

- A. A form of soil degradation that occurs when soil is compacted by heavy machinery.**
- B. A form of soil degradation that occurs when soil remains under water for prolonged periods, raising groundwater levels and inhibiting root oxygen uptake.**
- C. Erosion caused by wind.**
- D. Nutrient leaching due to heavy rainfall.**

Waterlogging happens when soil stays saturated with water for extended periods, filling the air spaces and leaving roots without enough oxygen to breathe. Plant roots rely on oxygen for respiration to supply energy for growth and nutrient uptake, and when oxygen is scarce, root function declines and plants become stressed or die. As saturation continues, the groundwater table can rise into the root zone, making drainage even worse and keeping conditions anaerobic. This combination—prolonged saturation and inhibited root oxygen uptake—is what defines waterlogging. The other options describe different soil problems: soil compaction reduces porosity and drainage, wind erosion removes soil, and nutrient leaching happens when soluble nutrients are washed away by heavy rainfall, none of which capture the oxygen-starved, permanently wet root zone characteristic of waterlogging.

**7. Which factor is associated with infant mortality rates?**

- A. Average rainfall**
- B. Education level**
- C. Urbanization**
- D. Whether mothers have access to good healthcare and nutrition**

Infant survival in the first year is most strongly tied to whether mothers and babies have access to good healthcare and proper nutrition. When pregnant women receive prenatal care, have skilled help at delivery, and get postnatal checkups, potential problems are identified and managed early, reducing the risk of infant complications and death. Adequate nutrition supports healthy birth weight, strong immune function, and better recovery after birth, all of which directly lower infant mortality. Other factors can influence health in smaller or more indirect ways. Rainfall affects food security and living conditions, but it doesn't directly determine whether an infant survives. Education can improve health practices and service use, yet the direct driver of reducing infant mortality is access to healthcare and nutrition. Urbanization can improve access in some places but isn't universally linked to lower infant mortality like direct healthcare and nutrition access.

**8. If a population grows at 2% per year, approximately how many years to double according to Rule of 70?**

- A. 35 years**
- B. 70 years**
- C. 140 years**
- D. 7 years**

The key idea here is the Rule of 70, a quick way to estimate how long it takes for a quantity growing at a steady annual percentage to double. Doubling time  $\approx 70$  divided by the growth rate in percent. At 2% per year, that gives about  $70 / 2 = 35$  years. For a quick check with the exact formula, imagine the population grows as  $P(t) = P_0 \times (1.02)^t$ . Set this equal to  $2P_0$  to double:  $(1.02)^t = 2$ . Taking logs,  $t = \ln(2) / \ln(1.02) \approx 0.6931 / 0.0198 \approx 35$  years. So the Rule of 70 gives a close, reliable estimate for this small growth rate. Why the other options don't fit: 70 years would correspond to roughly 1% growth per year, 140 years to about 0.5% growth, and 7 years to around 10% growth.

**9. In the demographic transition model, which stage is characterized by high birth rates and high death rates?**

- A. Preindustrial**
- B. Industrial**
- C. Postindustrial**
- D. Transitional**

In the preindustrial stage, both birth rates and death rates are high. People have many children partly because needed labor in agrarian economies and because infant mortality is high, while life expectancy is shorter due to limited medicine, poor sanitation, and variable food supplies. These opposing pressures—many births but many deaths—tend to keep the overall population size relatively stable or growing only slowly. This is why this stage is characterized by high birth rates alongside high death rates. As conditions improve, death rates fall while birth rates remain high in the transitional stage, leading to rapid population growth. In the industrial stage, birth rates begin to decline as economic development and urbanization reduce family size, while death rates stay low. In the postindustrial stage, both birth and death rates are low, and population growth levels off or declines.

## 10. Acid rain/deposition

- A. Produced by nitrogen oxides and sulfur oxides from man-made and natural resources**
- B. Produced by chlorofluorocarbons**
- C. Created by water vapor alone**
- D. Does not occur naturally**

Acid rain forms when sulfur dioxide and nitrogen oxides are released into the atmosphere and react with water to form sulfuric and nitric acids. These gases come from natural sources like volcanic eruptions and wildfires, as well as human activities such as burning fossil fuels and operating engines and factories. The acids then mix with precipitation, causing rain, snow, or fog to have a lower pH and affect soils, lakes, and plant life. The other ideas don't fit because chlorofluorocarbons cause ozone depletion rather than acid deposition; water vapor alone does not create acid rain since it's the reaction with these gases that produces the acids; and acid rain can and does occur from natural sources, though it is intensified by human emissions.

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## 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://dualenrollmentenvisci.examzify.com>**

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

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