

NBME FORM 29 PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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. In an experiment on nerve regeneration, which axons are least likely to regenerate after injury?**
 - A. Myelinated by Schwann cells
 - B. Myelinated by oligodendrocytes
 - C. Peripheral nerve axons
 - D. Axons of the spinal nerves
- 2. A 28-year-old woman presents with heavy menstrual bleeding and a family history of prolonged bleeding. What is the most likely cause of her bleeding disorder?**
 - A. Decreased platelet glycoprotein IIb/IIIa
 - B. Increased antiplatelet antibodies
 - C. Decreased platelet adhesion
 - D. Increased platelet sequestration in the spleen
- 3. In a patient with chronic renal failure and type 2 diabetes, which laboratory finding is most likely to increase?**
 - A. Calcium
 - B. Phosphate
 - C. Parathyroid hormone
 - D. Hemoglobin
- 4. Which factor is most effective in preventing the development of decubitus ulcers in patients with limited mobility?**
 - A. Arterial blood flow
 - B. Bacterial skin flora
 - C. Nutritional status
 - D. Pressure
- 5. What condition is marked by abnormal adrenal cortex hormone production due to anterior pituitary dysfunction?**
 - A. Primary hyperaldosteronism
 - B. Cushing's syndrome
 - C. Adrenal insufficiency
 - D. Secondary hypercortisolism

6. If a cancer patient survives for 3 years, what is the best representation of the probability of survival into the 4th year based on prior survival rates?
- A. $0.8 \times 0.875 \times 0.9 \times 0.901$
 - B. 0.901
 - C. $(0.8 + 0.875 + 0.9 + 0.901)/4$
 - D. 0.8
7. What characteristic finding would most likely be noted on a CT scan in a patient with acute mesenteric ischemia?
- A. Atrophy of the renal cortex
 - B. Obstruction of mesenteric arteries
 - C. Enlargement of splenic tissue
 - D. Hemorrhagic transformation
8. What condition typically results in hypochromic microcytic erythrocytes in a blood smear?
- A. Aplastic anemia
 - B. Acute myeloid leukemia
 - C. Chronic blood loss
 - D. Polycythemia vera
9. In a patient with clear, yellowish synovial fluid and a leukocyte count of $250/\text{mm}^3$, what is the most likely condition?
- A. Acute gouty arthritis
 - B. Osteoarthritis
 - C. Rheumatoid arthritis
 - D. Septic arthritis
10. What phenomenon explains the presence of both 45,X and 46,XX karyotypes in a patient with Turner syndrome?
- A. Genetic recombination
 - B. Loss of heterozygosity
 - C. Postfertilization nondisjunction
 - D. Translocation

Answers

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

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Explanations

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1. In an experiment on nerve regeneration, which axons are least likely to regenerate after injury?

- A. Myelinated by Schwann cells
- B. Myelinated by oligodendrocytes**
- C. Peripheral nerve axons
- D. Axons of the spinal nerves

In the context of nerve regeneration, axons that are myelinated by oligodendrocytes are indeed the least likely to regenerate after injury. This is largely due to the environment created by oligodendrocytes in the central nervous system (CNS), where these cells provide myelination for multiple axons. When axons in the CNS are damaged, the surrounding tissue becomes hostile to regeneration. Oligodendrocytes release inhibitory factors that prevent axonal growth, and the presence of glial scar tissue further complicates the regeneration process. In contrast, peripheral nervous system axons, which are myelinated by Schwann cells, have an inherently favorable environment for regeneration. Schwann cells not only provide support through myelination but also release growth factors that facilitate the repair and regeneration of damaged axons. Overall, the biological factors present in the CNS, coupled with the supportive role of peripheral myelinating cells, highlight why axons in the CNS are less likely to regenerate compared to their peripheral counterparts.

2. A 28-year-old woman presents with heavy menstrual bleeding and a family history of prolonged bleeding. What is the most likely cause of her bleeding disorder?

- A. Decreased platelet glycoprotein IIb/IIIa
- B. Increased antiplatelet antibodies
- C. Decreased platelet adhesion**
- D. Increased platelet sequestration in the spleen

The presentation of heavy menstrual bleeding and a family history of prolonged bleeding suggests an underlying bleeding disorder, particularly one that affects platelet function or levels. In this context, decreased platelet adhesion is a significant factor. Decreased platelet adhesion often points to a condition like von Willebrand's disease, which is characterized by a deficiency or dysfunction of von Willebrand factor (vWF). This factor is crucial for normal platelet function, particularly in the adhesion process where platelets must stick to the damaged vascular endothelium to form a clot. If there is inadequate adhesion, bleeding can occur, notably in situations like heavy menstrual periods. This understanding aligns with the woman's symptoms and family history; since bleeding disorders can often be hereditary, familial conditions like von Willebrand's disease could explain her bleeding tendency. Recognizing that decreased platelet adhesion is a central mechanism in several bleeding disorders provides clarity on why this is the most likely cause of her symptoms.

3. In a patient with chronic renal failure and type 2 diabetes, which laboratory finding is most likely to increase?

- A. Calcium
- B. Phosphate**
- C. Parathyroid hormone
- D. Hemoglobin

In patients with chronic renal failure, there is a marked impairment in the kidneys' ability to excrete phosphate. Normally, the kidneys help regulate phosphate levels by excreting excess amounts. As renal function declines, phosphate retention occurs, leading to elevated serum phosphate levels. This is exacerbated in patients with diabetes, where metabolic disturbances can further affect kidney function. The increase in phosphate levels can result from several factors, including reduced glomerular filtration rate (GFR), which is a hallmark of chronic renal failure. As phosphate accumulates, it can lead to secondary changes such as hyperparathyroidism, as the parathyroid glands respond to relatively low calcium levels and elevate parathyroid hormone production to increase calcium and decrease phosphate levels in the body. This situation often leads to complications like vascular calcifications and bone disease due to shifting mineral balance. Therefore, in the context of chronic renal failure combined with type 2 diabetes, the most likely laboratory finding to be increased is phosphate.

4. Which factor is most effective in preventing the development of decubitus ulcers in patients with limited mobility?

- A. Arterial blood flow
- B. Bacterial skin flora
- C. Nutritional status
- D. Pressure**

The development of decubitus ulcers, also known as pressure ulcers or bedsores, is primarily related to sustained pressure on the skin, particularly over bony prominences, combined with factors such as shear and moisture. In patients with limited mobility, the skin over these areas doesn't receive enough blood flow due to the pressure, leading to ischemia and tissue necrosis. Pressure is indeed the most significant factor contributing to the formation of these ulcers because it directly affects tissue perfusion. Regular repositioning of the patient to relieve this pressure is essential in preventing ulcer formation. This action redistributes blood flow to the areas at risk of breakdown, thereby preserving the integrity of the skin and underlying tissues. While arterial blood flow, bacterial skin flora, and nutritional status can all play roles in skin health and healing, they are secondary to the immediate and direct effect of pressure in the context of mobility limitation. Addressing pressure through proper positioning, use of specialized mattresses, and frequent turning significantly reduces the risk of decubitus ulcer development in susceptible patients.

5. What condition is marked by abnormal adrenal cortex hormone production due to anterior pituitary dysfunction?

- A. Primary hyperaldosteronism
- B. Cushing's syndrome**
- C. Adrenal insufficiency
- D. Secondary hypercortisolism

The condition characterized by abnormal adrenal cortex hormone production due to anterior pituitary dysfunction is secondary hypercortisolism. This occurs when there is excessive production of cortisol, primarily due to an overproduction of adrenocorticotropic hormone (ACTH) from the anterior pituitary gland. In secondary hypercortisolism, the adrenal glands themselves are not the initial problem; rather, they are overactive in response to excess ACTH stimulation from the pituitary. In this scenario, the elevated levels of cortisol can lead to a range of symptoms consistent with Cushing's syndrome, which is a clinical manifestation often seen in cases of secondary hypercortisolism. It is important to differentiate this from primary conditions, where the adrenal glands themselves are the source of the problem. While primary hyperaldosteronism results from adrenal gland dysfunction, and adrenal insufficiency indicates inadequate hormone production due to other causes, the direct relationship between anterior pituitary dysfunction and abnormal adrenal hormone production points to secondary hypercortisolism as the correct answer.

6. If a cancer patient survives for 3 years, what is the best representation of the probability of survival into the 4th year based on prior survival rates?

- A. $0.8 \times 0.875 \times 0.9 \times 0.901$
- B. 0.901**
- C. $(0.8 + 0.875 + 0.9 + 0.901)/4$
- D. 0.8

The correct choice reflects the probability of survival into the 4th year based on the survival rates given for each year of the previous three years. In this context, once the patient has survived the initial three years, their continued survival into the next year (the 4th year) is evaluated based on the most recent survival rate, which is represented as 0.901. This approach highlights that the prior survival rates for the first three years do not compound or multiply together to influence the probability of surviving into the 4th year after having already survived the first three years. Instead, the current year's survival rate directly indicates the likelihood of remaining alive, independent of prior survival rates. This understanding is rooted in the concept of survival probabilities being calculated in a conditional manner once a patient reaches a particular time point, affirming that the relevant metric for predicting future survival is the most current rate available, which, in this case, is 0.901. This aligns with the principles of survival analysis, specifically focusing on the Markov property where the future state (survival) depends only on the present state, not on how the present state was achieved.

7. What characteristic finding would most likely be noted on a CT scan in a patient with acute mesenteric ischemia?

- A. Atrophy of the renal cortex
- B. Obstruction of mesenteric arteries**
- C. Enlargement of splenic tissue
- D. Hemorrhagic transformation

In the context of acute mesenteric ischemia, the characteristic finding on a CT scan is often obstruction of the mesenteric arteries. This condition typically arises from vascular compromise, such as embolism or thrombosis, which leads to decreased blood flow to the intestines. CT imaging can reveal the presence of emboli or thrombosis affecting the superior mesenteric artery or other mesenteric vessels, indicating compromised blood supply to the bowel. Additionally, other indirect signs, such as bowel wall thickening and attenuation changes, may also be observed, but the specific identification of arterial obstruction is paramount in diagnosing acute mesenteric ischemia. This identification is crucial for timely intervention, as it can determine the course of treatment needed to restore blood flow and prevent bowel necrosis.

8. What condition typically results in hypochromic microcytic erythrocytes in a blood smear?

- A. Aplastic anemia
- B. Acute myeloid leukemia
- C. Chronic blood loss**
- D. Polycythemia vera

Hypochromic microcytic erythrocytes are a hallmark of iron deficiency anemia, which often occurs due to chronic blood loss. In chronic blood loss, the body continuously loses red blood cells over time, leading to a depletion of iron stores necessary for the synthesis of hemoglobin. When the available iron is insufficient, the production of red blood cells can be impaired, resulting in smaller (microcytic) and less colored (hypochromic) red blood cells. This condition is often seen in patients with gastrointestinal bleeding, heavy menstrual periods, or other conditions that cause a gradual loss of blood. Over time, as the iron supply diminishes, the body compensates by producing more red blood cells, but these cells will be smaller and less effective in transporting oxygen due to inadequate hemoglobin content. Understanding the cellular morphology seen in a blood smear helps in the diagnosis of the underlying cause of anemia and assists in determining the appropriate course of treatment.

9. In a patient with clear, yellowish synovial fluid and a leukocyte count of 250/mm³, what is the most likely condition?

- A. Acute gouty arthritis
- B. Osteoarthritis**
- C. Rheumatoid arthritis
- D. Septic arthritis

In a patient presenting with clear, yellowish synovial fluid and a leukocyte count of 250/mm³, the findings indicate a non-inflammatory condition. Clear and yellowish synovial fluid typically suggests that there is no significant inflammatory process, which is characterized by turbid or cloudy fluid and higher leukocyte counts. The leukocyte count of 250/mm³ falls within the range seen in osteoarthritis, which generally has a mild increase in white blood cells (often fewer than 2000/mm³), especially relative to inflammatory conditions where counts would be much higher. In inflammatory arthritis (like rheumatoid arthritis or acute gouty arthritis), the synovial fluid might appear cloudy, and the white blood cell count would typically be significantly elevated, often reaching thousands of cells per microliter, and usually having a predominance of neutrophils in gout or lymphocytes in rheumatoid arthritis. Septic arthritis would usually present with turbid synovial fluid and a very high leukocyte count, often greater than 50,000/mm³ with a predominance of neutrophils, making it unlikely in this scenario. Considering these aspects, the clear, yellowish synovial fluid combined with a relatively low leukocyte count is most consistent with osteoarthritis.

10. What phenomenon explains the presence of both 45,X and 46,XX karyotypes in a patient with Turner syndrome?

- A. Genetic recombination
- B. Loss of heterozygosity
- C. Postfertilization nondisjunction**
- D. Translocation

The phenomenon seen in Turner syndrome, where both 45,X and 46,XX karyotypes coexist in a patient, can be primarily attributed to postfertilization nondisjunction. This occurs when there is an error during cell division after fertilization, leading to loss of one sex chromosome in some of the daughter cells. In the context of Turner syndrome, the presence of 45,X indicates that in certain cells, one X chromosome is missing due to this nondisjunction event. Meanwhile, some cells may retain the complete set, leading to the 46,XX configuration. This mosaicism is not due to a failure in the initial separation of chromosomes during meiosis in the parents (which would lead to a single karyotype) but rather happens during later cell division in the developing embryo. This process is crucial in understanding the range of phenotypic expressions observed in Turner syndrome, as the proportion of 45,X versus 46,XX cells can influence the severity of clinical manifestations.

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.

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

<https://nbmeform29.examzify.com>

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

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