USMLE (UNITED STATES MEDICAL LICENSING EXAMINATION) STEP 1 PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. Which condition is a common cause of Cushing syndrome and is characterized by bilateral adrenal atrophy due to decreased ACTH?

A. Adrenal Cushing syndrome

B. Cushing disease

C. Ectopic Cushing syndrome

D. Exogenous Corticosteroids

2. What distinguishes Eccentric LVH from Concentric LVH?

A. Increased left ventricular wall thickness

B. Left atrial enlargement

C. Normal ejection fraction

D. Reduced chamber size

3. What type of genetic mutation is involved in Germline Mosaicism?

A. Autosomal dominant

B. Deletion mutation

C. Spontaneous mutation

D. Somatic mutation

4. Which type of thrombosis is commonly associated with Lupus?

A. DVT

B. Myocardial infarction

C. Pulmonary embolism

D. Peripheral artery thrombosis

5. What is a consequence of a patent foramen ovale that fails to close after birth?

A. Increased risk of coronary artery disease

B. Impaired lung development

C. Development of paradoxical emboli

D. Risk of aortic dissection

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6. Which condition is associated with alterations in total serum T4 due to changes in thyroxine-binding globulin (TBG)?

A. Empty sella syndrome

B. Estrogen Effects on TBG and Thyroid Hormones

C. Hashimoto thyroiditis

D. Pituitary apoplexy

7. Which cardiac anomaly is associated with cyanosis and clubbing, particularly in the lower extremities?

A. Coarctation of the aorta

B. Patent ductus arteriosus

C. Aortic stenosis

D. Mitral stenosis

8. Which mutations are associated with Tuberous Sclerosis?

A. Heart defects in AV valves

B. Tuberin and harmartin mutations

C. Seizures

D. Rhabdomyoma

9. Which nerves are typically involved in an upper brachial plexus injury?

A. Musculocutaneous and Suprascapular Nerves

B. Median and Radial Nerves

C. Ulnar and Axillary Nerves

D. Femoral and Sciatic Nerves

10. Which protein, also known as MDR1, functions as a transmembrane efflux pump with a broad specificity for hydrophobic compounds?

A. P-Selectin

B. E-Cadherin

C. P-Glycoprotein

D. L-Selectin

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Answers

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

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Explanations

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1. Which condition is a common cause of Cushing syndrome and is characterized by bilateral adrenal atrophy due to decreased ACTH?

A. Adrenal Cushing syndrome

B. Cushing disease

C. Ectopic Cushing syndrome

D. Exogenous Corticosteroids

The condition that commonly leads to Cushing syndrome and is characterized by bilateral adrenal atrophy due to decreased adrenocorticotropic hormone (ACTH) is the use of exogenous corticosteroids. When corticosteroids are administered externally (e.g., through medication like prednisone), they provide a negative feedback mechanism on the hypothalamus and pituitary gland. This feedback decreases the production of ACTH as the body perceives there to be adequate levels of glucocorticoids already circulating. As a result, the decreased ACTH levels cause the adrenal glands to receive less stimulation, leading to bilateral adrenal atrophy. Over time, the adrenal cortex becomes underdeveloped because it is not being regularly stimulated to produce cortisol, contributing to the hallmark symptoms of Cushing syndrome, which include weight gain, hypertension, and skin changes. In contrast, other conditions such as adrenal Cushing syndrome and Cushing disease arise from excess production of cortisol, leading to different pathological mechanisms and typically not involving bilateral adrenal atrophy due to low ACTH levels. Ectopic Cushing syndrome is caused by ectopic production of ACTH by non-pituitary tumors, which usually leads to increased adrenal stimulation rather than atrophy.

2. What distinguishes Eccentric LVH from Concentric LVH?

A. Increased left ventricular wall thickness

B. Left atrial enlargement

C. Normal ejection fraction

D. Reduced chamber size

Eccentric LVH and Concentric LVH are both terms used to describe hypertrophy, or thickening, of the left ventricular wall. However, they refer to different types or patterns of hypertrophy. Concentric LVH is characterized by increased wall thickness and a decrease in left ventricular chamber size, while Eccentric LVH is characterized by increased wall thickness and an enlargement of the left atrium. Therefore, option B, Left atrial enlargement, is the most appropriate distinguishing feature between the two types of LVH. Option A is incorrect because both types of LVH involve increased wall thickness. Option C is incorrect because the ejection fraction can be normal or reduced in both types of LVH. Option D is incorrect because the chamber size is reduced in Concentric LVH, but not in Eccentric LVH.

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3. What type of genetic mutation is involved in Germline Mosaicism?

A. Autosomal dominant

B. Deletion mutation

C. Spontaneous mutation

D. Somatic mutation

Germline mosaicism refers to a situation where a person has two or more genetically different cell lines in their germ cells (sperm or eggs) as a result of spontaneous mutations that occur during early embryonic development. These mutations may arise in the germline cells of the embryo and can lead to a mix of normal and mutated alleles. Spontaneous mutations are changes in the DNA sequence that occur naturally without any external influence. They can result from errors in DNA replication or repair processes, as well as environmental factors. In the context of germline mosaicism, these spontaneous mutations can create a scenario where only some of the gametes (egg or sperm) carry the mutation while others do not. This can lead to offspring being affected by a genetic condition even if one parent does not have the condition or show symptoms. Understanding germline mosaicism is crucial because it impacts inheritance patterns and the likelihood of offspring inheriting a genetic disorder. This phenomenon also highlights the complexity of genetic transmission and the importance of thorough family histories in genetic counseling.

4. Which type of thrombosis is commonly associated with Lupus?

A. DVT

B. Myocardial infarction

C. Pulmonary embolism

D. Peripheral artery thrombosis

In the context of lupus, venous thrombosis, particularly deep vein thrombosis (DVT), is commonly associated. Patients with systemic lupus erythematosus (SLE) have an increased risk of thrombotic events due to the presence of antiphospholipid antibodies, which can lead to a hypercoagulable state. This condition predisposes individuals to venous thromboembolism, including DVT. While other types of thrombosis, such as pulmonary embolism and arterial thrombosis, can occur in patients with lupus, the classic association observed in the literature is with DVT due to its prevalence in these patients. Myocardial infarction can also be seen in lupus patients, generally related to other risk factors rather than a direct consequence of lupus itself. Peripheral artery thrombosis is less commonly discussed in relation to lupus compared to venous thrombosis. Thus, deep vein thrombosis is the most commonly recognized thrombotic event linked with lupus.

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5. What is a consequence of a patent foramen ovale that fails to close after birth?

A. Increased risk of coronary artery disease

B. Impaired lung development

C. Development of paradoxical emboli

D. Risk of aortic dissection

A patent foramen ovale (PFO) occurs when the foramen ovale, an opening between the right and left atria of the heart, fails to close after birth. Normally, this opening is supposed to close within the first few months of life as pressure changes in the heart occur following the establishment of independent pulmonary circulation. When a PFO persists, it can allow blood to pass from the right atrium to the left atrium. This bypasses the lungs, which can have significant clinical implications. One of the primary consequences of a PFO is the potential for paradoxical emboli. This situation arises when a thrombus (blood clot) that originates in the venous system travels through the right side of the heart, crosses over to the left side via the PFO, and subsequently enters systemic circulation. If this embolus travels to the brain or other vital organs, it can cause serious complications such as a stroke or organ ischemia. The mechanics of this phenomenon are critical to understanding the risks associated with a PFO. Normally, clots that arise in veins do not affect the arterial circulation due to the filtering effect of the lungs. In patients with a patent foramen ovale, however, this protective mechanism is circumvented

6. Which condition is associated with alterations in total serum T4 due to changes in thyroxine-binding globulin (TBG)?

A. Empty sella syndrome

B. Estrogen Effects on TBG and Thyroid Hormones

C. Hashimoto thyroiditis

D. Pituitary apoplexy

The correct choice indicates that alterations in total serum T4 levels can occur due to changes in thyroxine-binding globulin (TBG), which is influenced by estrogen. Estrogen increases the synthesis of TBG in the liver, leading to increased total T4 levels. This elevation in total T4 does not reflect a true increase in thyroid hormone production or an increase in free T4, which is the active form of the hormone. As a result, conditions that lead to elevated estrogen levels, such as pregnancy or estrogen therapy, can result in elevated total T4 due to increased TBG levels. In contrast, other conditions listed do not primarily involve changes in TBG. Hashimoto thyroiditis is an autoimmune condition that leads to hypothyroidism and would generally reduce levels of circulating thyroid hormones rather than affecting TBG. Empty sella syndrome and pituitary apoplexy are conditions affecting the pituitary gland and do not directly cause changes in TBG levels or resultant changes in total serum T4. Thus, the direct connection between estrogen, TBG, and total serum T4 makes the choice associated with estrogen effects on TBG and thyroid hormones the correct answer.

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7. Which cardiac anomaly is associated with cyanosis and clubbing, particularly in the lower extremities?

A. Coarctation of the aorta

B. Patent ductus arteriosus

C. Aortic stenosis

D. Mitral stenosis

The correct choice is associated with the presence of cyanosis and clubbing, particularly in the lower extremities. In this context, patent ductus arteriosus leads to increased blood flow to the lungs, resulting in pulmonary over-circulation. However, in certain cases (especially in larger defects or when associated with other conditions, such as Eisenmenger syndrome), the right-to-left shunting can occur, allowing deoxygenated blood to enter the systemic circulation. This can lead to cyanosis, especially noticeable in the extremities, including the lower half of the body. In some children with significant left-to-right shunting, a complication may arise where the shunting reverses direction due to increased pulmonary vascular resistance. This choice highlights a key cardiac anomaly that, under certain circumstances, can lead to the clinical findings of cyanosis and clubbing, particularly affecting the lower extremities. Other conditions listed may not typically present with this specific symptomatology, emphasizing the unique link between patent ductus arteriosus, cyanosis, and clubbing in specific clinical scenarios.

8. Which mutations are associated with Tuberous Sclerosis?

A. Heart defects in AV valves

B. Tuberin and harmartin mutations

C. Seizures

D. Rhabdomyoma

Tuberous sclerosis is a genetic disorder characterized by benign tumors in various organs, including the brain, kidneys, heart, and skin. The condition is primarily caused by mutations in two key genes: TSC1 and TSC2. The TSC1 gene encodes a protein called hamartin, while the TSC2 gene encodes tuberin. Mutations in these genes disrupt the regulation of cell growth and proliferation, leading to the formation of hamartomas, which are the hallmark of tuberous sclerosis. Therefore, identifying mutations in the TSC1 or TSC2 genes—resulting in the inadequate production or functional impairment of hamartin and tuberin—is directly linked to the development of tuberous sclerosis. This connection highlights the importance of these genetic alterations in the pathology of the disease, which is why mutations in tuberin and hamartin are considered the primary genetic defects associated with tuberous sclerosis. In contrast, while heart defects, seizures, and rhabdomyomas are clinical manifestations often seen in patients with tuberous sclerosis, they do not directly represent the genetic mutations that cause the disease. Heart defects are related to other congenital issues; seizures can occur due to neurological involvement but are not causative

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9. Which nerves are typically involved in an upper brachial plexus injury?

A. Musculocutaneous and Suprascapular Nerves

B. Median and Radial Nerves

C. Ulnar and Axillary Nerves

D. Femoral and Sciatic Nerves

An upper brachial plexus injury commonly affects the roots C5 and C6, which are primarily responsible for innervating the muscles of the shoulder and upper arm. The musculocutaneous nerve, originating from this area, innervates the coracobrachialis, biceps brachii, and brachialis muscles, playing a vital role in flexing the elbow. The suprascapular nerve, also from the C5-C6 roots, innervates the supraspinatus and infraspinatus muscles, which are important for shoulder abduction and external rotation. When there is an injury in this region, such as from trauma (e.g., a motorcycle accident, falling onto the shoulder, or obstetric complications), these nerves can become compromised. Symptoms may include weakness in shoulder abduction and flexion as well as decreased sensation in the lateral aspect of the arm. The other listed nerves, such as the median and radial nerves, are more commonly associated with lower brachial plexus injuries, while the ulnar and axillary nerves are also related to more distal injuries. The femoral and sciatic nerves are not involved in brachial plexus injuries, as they primarily innervate the

10. Which protein, also known as MDR1, functions as a transmembrane efflux pump with a broad specificity for hydrophobic compounds?

A. P-Selectin

B. E-Cadherin

C. P-Glycoprotein

D. L-Selectin

P-Glycoprotein, also referred to as MDR1 (multidrug resistance protein 1), is a crucial component of the body's defense against potentially harmful compounds. It functions by actively transporting a wide array of hydrophobic substances out of cells, which contributes to the cellular detoxification processes. This transmembrane efflux pump is particularly significant in the context of pharmacology and toxicology, as it plays key roles in determining the absorption, distribution, and resistance of various drugs within the body. P-Glycoprotein is encoded by the ABCB1 gene and is especially noted for its ability to extrude a variety of xenobiotics and endogenous compounds, thereby influencing the pharmacokinetics of numerous medications. Its broad substrate specificity means that it can interact with many hydrophobic compounds, limiting their intracellular accumulation. This feature is central to the phenomenon of multidrug resistance observed in certain cancer cells, where increased expression of P-Glycoprotein can lead to reduced effectiveness of chemotherapy. In contrast, other proteins like P-Selectin and L-Selectin have roles in leukocyte adhesion and recruitment during inflammatory responses, while E-Cadherin is primarily involved in cell-cell adhesion in epithelial tissues. Therefore, they do not

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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.

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

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

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