NDLE Board Nutritional Biochemistry and Clinical Dietetics Exam 1 Practice (Sample)

Study Guide

BY EXAMZIFY

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

1. The site of calcium, magnesium, iron, and chloride absorption is:

A. Duodenum

B. Ileum

C. Stomach

D. Jejunum

2. Which combination of vitamins is listed as enhancing calcium absorption?

A. Vitamins A and K

B. Vitamins E and B12

C. Vitamins D and K

D. Vitamins C and D

3. An adult consuming 1,800 kcal daily would require how many milliliters of water per day according to the recommendation of 1 ml per kcal?

A. 1200 ml

B. 2100 ml

C. 2400 ml

D. 1800 ml

4. Which procedure creates a permanent opening into the stomach for a feeding tube, usually performed with endoscopic guidance?

A. PEG

B. Nasojejunal tube

C. Jejunostomy

D. Orogastric tube

5. In adults who are overweight (BMI 25 kg/m2) and have one or more risk factors for Type 2 Diabetes Mellitus, which test is NOT typically used for screening?

A. FBS

B. A1C

C. FPG

D. 2-hour OGTT

6. Which B vitamin functions as a coenzyme in the breakdown of fat for energy production?

A. Vitamin B1

B. Vitamin B2

C. Vitamin B3

D. Vitamin B12

7. Convert a height of 5 feet 6 inches to centimeters.

A. 165 cm

B. 167.6 cm

C. 170 cm

D. 160 cm

8. Which organ weighs approximately 1,500 grams and is the body's largest gland?

A. Liver

B. Pancreas

C. Spleen

D. Kidney

9. Which of the following is NOT a likely cause of esophagitis?

A. Backflow of gastric juices

B. Viral infection

C. Prolonged intubation

D. Skipping of meals

10. Complexes of lipids and proteins responsible for transport and distribution of lipids in the lymph and blood are called

A. Lipid droplets

B. Albumin

C. Glycoproteins

D. Lipoproteins

Answers

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

Explanations

1. The site of calcium, magnesium, iron, and chloride absorption is:

A. Duodenum

B. Ileum

C. Stomach

D. Jejunum

The key idea is where most mineral absorption happens in the small intestine. The jejunum is the major workhorse for absorbing nutrients because it has a vast surface area and abundant transport systems to take up minerals and electrolytes. For calcium, uptake occurs largely in the proximal small intestine, including the jejunum, via transcellular routes involving TRPV6 channels and calbindin, with additional paracellular passage when calcium is high. Magnesium is absorbed chiefly in the jejunal mucosa through transporters like TRPM6/7. Chloride absorption occurs along the small intestine, with substantial absorption in the jejunum as part of electroneutral NaCl absorption. Iron, while predominantly absorbed in the duodenum, also has uptake in the proximal jejunum via DMT1 and related pathways, so the jejunum participates in iron absorption as food moves beyond the duodenum. Putting this together, the jejunum best accounts for the absorption of these minerals in a single, common site, since it handles substantial absorption of calcium, magnesium, chloride, and contributes to iron uptake as well.

2. Which combination of vitamins is listed as enhancing calcium absorption?

A. Vitamins A and K

B. Vitamins E and B12

C. Vitamins D and K

D. Vitamins C and D

Calcium absorption in the gut is enhanced by vitamin D. Vitamin D promotes the expression of calcium-transport proteins in intestinal cells, increasing the amount of calcium that moves from the gut into the bloodstream. Vitamin C, while important for collagen synthesis and overall bone health, does not have a direct, strong effect on gut calcium absorption. So a combination that includes vitamin D is the one that best supports intestinal calcium uptake. Among the options, the pair that contains vitamin D is the best match for enhancing calcium absorption.

3. An adult consuming 1,800 kcal daily would require how many milliliters of water per day according to the recommendation of 1 ml per kcal?

A. 1200 ml

B. 2100 ml

C. 2400 ml

D. 1800 ml

The concept tested is the guideline that daily water intake equals 1 milliliter per kilocalorie of energy consumed. For 1,800 kcal, multiply: 1,800 kcal × 1 ml/kcal = 1,800 ml. So the daily water requirement under this rule is 1,800 ml. The other options don't fit this rule for 1,800 kcal, as they would imply amounts that don't align with 1 ml per kcal.

4. Which procedure creates a permanent opening into the stomach for a feeding tube, usually performed with endoscopic guidance?

A. PEG

B. Nasojejunal tube

C. Jejunostomy

D. Orogastric tube

The concept being tested is how to establish a long-term access route into the stomach for feeding. Percutaneous endoscopic gastrostomy creates a permanent opening (stoma) from the skin into the stomach, typically guided by an endoscope. This endoscopic guidance makes placement safer and helps form a durable tract that can accommodate a feeding tube or a low-profile device for years of use. In contrast, tubes that go in through the nose or mouth (nasogastric or orogastric) are temporary and do not create a lasting gastric opening. A jejunostomy, while a feeding access, opens into the jejunum rather than the stomach, and thus does not provide a gastric route. So, the procedure that best fits a permanent gastric access with endoscopic visualization is the percutaneous endoscopic gastrostomy.

5. In adults who are overweight (BMI 25 kg/m2) and have one or more risk factors for Type 2 Diabetes Mellitus, which test is NOT typically used for screening?

A. FBS

B. A1C

C. FPG

D. 2-hour OGTT

Screening for type 2 diabetes in adults who are overweight with risk factors relies on tests that are standardized, validated, and widely used in guidelines. The common options are fasting plasma glucose, hemoglobin A1C, and the 2-hour oral glucose tolerance test. These have clear cutoffs and are based on established diagnostic criteria. Fasting blood sugar, or fasting blood glucose measured in whole blood, is not typically used for screening because it is less standardized and less reliable for screening purposes. Plasma-based measurements (FPG), A1C, and the OGTT align with the diagnostic thresholds used in guidelines, and they provide more consistent, reproducible results across labs and settings. Therefore, the test that is not typically used for screening in this scenario is fasting blood sugar.

6. Which B vitamin functions as a coenzyme in the breakdown of fat for energy production?

A. Vitamin B1

B. Vitamin B2

C. Vitamin B3

D. Vitamin B12

Fatty acid breakdown for energy relies on beta-oxidation, where the first dehydrogenation step is carried out by flavoprotein enzymes that use FAD as a coenzyme. FAD is the oxidized form of riboflavin (vitamin B2), so this vitamin provides the coenzyme needed for fat oxidation to proceed. Without riboflavin, the FAD-dependent enzymes can't efficiently catalyze those dehydrogenation steps, limiting fat-derived energy production. Other B vitamins support energy metabolism in various ways, but they don't supply the specific coenzyme for the beta-oxidation step. Vitamin B12 is involved in other fatty acid pathways (like odd-chain fatty acid metabolism) and isn't the primary coenzyme for general fat oxidation.

7. Convert a height of 5 feet 6 inches to centimeters.

A. 165 cm

B. 167.6 cm

C. 170 cm

D. 160 cm

Convert the height to inches first: 5 feet is 60 inches, plus 6 inches gives 66 inches. Each inch equals 2.54 centimeters, so 66 × 2.54 = 167.64 centimeters. Rounding to one decimal place gives 167.6 cm, which is the value that matches the standard way of reporting height in centimeters. The other numbers don't fit because they correspond to different total inches (for example, 165 cm is about 65 inches, 170 cm is about 66.9 inches, and 160 cm is about 63 inches).

8. Which organ weighs approximately 1,500 grams and is the body's largest gland?

A. Liver

B. Pancreas

C. Spleen

D. Kidney

The liver is the body's largest gland and weighs about 1,500 grams (roughly 3 pounds) in an average adult. This substantial mass reflects its many vital duties: metabolizing nutrients, detoxifying chemicals, producing bile for digestion, storing glycogen and vitamins, and supporting immune functions. Other options are much lighter glands or not glands: the pancreas is a smaller gland weighing only about a few dozen grams; the spleen is not a gland and is roughly a few hundred grams; kidneys are also not glands and collectively weigh only a few hundred grams. Thus, the liver's large weight and its broad range of functions make it the correct choice.

9. Which of the following is NOT a likely cause of esophagitis?

A. Backflow of gastric juices

B. Viral infection

C. Prolonged intubation

D. Skipping of meals

Esophagitis happens when the esophageal lining is irritated or damaged by substances or conditions that come into contact with it. The common culprits are acid from the stomach that refluxes upward, infections that inflame the mucosa (especially in people with weakened immunity), and direct mucosal injury from procedures or devices like prolonged intubation. Skipping meals does not injure or inflame the esophagus; it doesn't introduce acid, infection, or mechanical irritation to the esophageal lining. So it isn't a likely cause of esophagitis.

10. Complexes of lipids and proteins responsible for transport and distribution of lipids in the lymph and blood are called

A. Lipid droplets

B. Albumin

C. Glycoproteins

D. Lipoproteins

Lipoproteins are the structures that allow lipids to travel through watery environments like lymph and blood by forming a particle with a hydrophobic lipid core surrounded by a polar surface. The core mainly contains triglycerides and cholesteryl esters, while the surface is made of phospholipids, free cholesterol, and specific proteins called apolipoproteins. This arrangement makes lipids soluble enough to circulate, and the types of lipoproteins (such as chylomicrons from the intestine, and VLDL, LDL, HDL from the liver) differ in density and composition, guiding delivery to tissues or removal from circulation. Chylomicrons enter the lymph as they transport dietary lipids; in blood they are processed into remnants. HDL is involved in reverse cholesterol transport, helpingreturn cholesterol to the liver. While albumin can bind free fatty acids and some lipids for transport, it does not form the lipid-protein complexes that circulate as lipoproteins. Lipid droplets are intracellular storage forms, not circulating carriers, and glycoproteins are proteins with carbohydrate attachments, not the lipid-carrying particles described here.

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://ndlenutbiochemclindietetics1.examzify.com

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