Soft Contact Lenses – Materials, Manufacturing, and Screening Practice Test (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

1. FDA group 5 classification: Which description best fits Group 5?

A. Silicone Hydrogels

B. Low Water Content, Ionic Polymer

C. High Water Content, Nonionic Polymer

D. High Water Content, Ionic Polymer

2. Out of the five FDA classifications, which groups are most likely to attract deposits?

A. Group 2 and 5

B. Group 1 and 2

C. Group 4 and 5

D. Group 3 and 4

3. Spin casting tends to decenter in which direction?

A. Temporally (toward the temple)

B. Nasally (toward the nose)

C. Inferiorly (downward)

D. Superiorly (upward)

4. Which of the following is a medical history question to ask a contact lens wearer?

A. Thyroid Imbalance

B. Eye Trauma

C. Monocular Dilemma

D. Strabismus

5. Which characteristic describes the lens's resistance to spoilage and deposits?

A. Maintain stable dimensions/parameters

B. Durable

C. Optically regular

D. Resists spoilage and deposits

6. Which tear film parameter measures the salt concentration of the tear film?

A. Tear film osmolarity

B. TBUT

C. Pinguecula

D. Endothelium

7. Which wearing schedule allows wear up to 30 days before removal?

A. Extended wear

B. Daily wear

C. Flexible wear

D. Continuous wear

8. What is MRD1+MRD2 equal to?

A. Pupil diameter

B. Vertical fissure width equals MRD1 + MRD2

C. Tear film osmolarity

D. Corneal thickness

9. Which is a common reason a patient may want contact lenses?

A. Hair Color Change

B. Weight Loss

C. Cosmesis

D. Color Vision Correction

10. Which group binds water or increases oxygen permeability in contact lenses?

A. Suspended chemical groups

B. Ionic crosslinks

C. Hydrophobic moieties

D. Covalent bonds

Answers

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

Explanations

1. FDA group 5 classification: Which description best fits Group 5?

A. Silicone Hydrogels

B. Low Water Content, Ionic Polymer

C. High Water Content, Nonionic Polymer

D. High Water Content, Ionic Polymer

Group 5 refers to silicone hydrogel lens materials, which are defined by containing silicone in the polymer network to greatly boost oxygen permeability. This higher oxygen transmission (Dk) is the defining feature that sets silicone hydrogels apart from the traditional hydrogel groups, which are categorized mainly by water content and ionic character. While older groups describe low/high water content and ionic vs nonionic properties, Group 5 specifically captures the silicone-containing materials that deliver much higher oxygen availability to the cornea. That's why describing Group 5 as silicone hydrogels best fits the classification.

2. Out of the five FDA classifications, which groups are most likely to attract deposits?

A. Group 2 and 5

B. Group 1 and 2

C. Group 4 and 5

D. Group 3 and 4

Tear film deposits on contact lenses are driven by electrostatic interactions between charged tear components and the lens surface. Proteins and lipids in the tear film carry charges, and when the lens material has ionic (charged) groups, these tear components are drawn to and held on the surface more strongly. This makes ionic lens materials more prone to deposit formation compared with nonionic ones. Among the FDA classifications, the groups with ionic characteristics will thus attract more deposits than the nonionic groups, and this holds true across both low and high water content. So the ionic categories consistently show higher deposit tendency, which is why those two ionic groups are the ones most likely to accumulate deposits. Nonionic materials have weaker electrostatic attraction to tear proteins, leading to fewer deposits, while silicone-containing lenses (a different category) interact with tears through other mechanisms, not the primary ionic attraction considered here.

3. Spin casting tends to decenter in which direction?

A. Temporally (toward the temple)

B. Nasally (toward the nose)

C. Inferiorly (downward)

D. Superiorly (upward)

In spin casting, the lens material is flung outward by centrifugal force as the mold spins. This flow causes more material to accumulate toward the outer edge on the temporal side, while the optical zone can shift in that direction. The result is a tendency for the lens to decenter toward the temple. The other directions would require different flow biases or orientations that aren't typical of standard spin casting, so temporally decentered is the most common outcome.

4. Which of the following is a medical history question to ask a contact lens wearer?

A. Thyroid Imbalance

B. Eye Trauma

C. Monocular Dilemma

D. Strabismus

When screening a contact lens wearer, you focus on systemic health factors that can affect the ocular surface and lens tolerance. Thyroid imbalance is important because thyroid-related eye changes—especially in Graves' disease—can cause eyelid retraction, protrusion of the eye, and exposure or dry eye. These conditions increase corneal exposure, tear film instability, and healing risk, which directly influence how well a contact lens fits, feels, and protects the eye. Asking about thyroid issues helps identify patients who may have higher risk for lens-related complications and who may need closer monitoring or a different lens approach. Other options describe past eye events or alignment issues that are important clinically but do not carry the same systemic-level risk to lens wear as thyroid-related ocular surface changes.

5. Which characteristic describes the lens's resistance to spoilage and deposits?

A. Maintain stable dimensions/parameters

B. Durable

C. Optically regular

D. Resists spoilage and deposits

Deposits resistance describes how well a lens material resists the buildup of tear-film components and microorganisms on its surface. A material that resists spoilage and deposits stays cleaner, which helps maintain comfort, easier cleaning, and stable optical properties over wear time. The sense is that proteins, lipids, minerals, and microbes are less likely to adhere or multiply, reducing surface roughness and staining that can degrade comfort and vision. The other traits address different needs: maintaining stable dimensions/parameters ensures the lens fits the cornea consistently over time, durability refers to the lens's ability to withstand handling and wear without cracking or tearing, and optical regularity concerns the smoothness and uniformity of the refractive surface for clear vision. None of these directly target cleanliness and deposit resistance in the way this characteristic does, making it the best descriptor for this property.

6. Which tear film parameter measures the salt concentration of the tear film?

A. Tear film osmolarity

B. TBUT

C. Pinguecula

D. Endothelium

The main concept is that tear film osmolarity directly reflects the salt (solute) content of the tear film. Osmolarity is a measure of dissolved particles per liter, and tears contain salts and electrolytes as their primary solutes. So a higher tear osmolarity indicates a higher concentration of salts in the tear film. Clinically, tear osmolarity is used to assess tear composition and is a key marker of dry eye stress, since hyperosmolar tears mean more concentrated salts. Tear break-up time assesses how long the tear film remains stable before breaking up, not its composition. A pinguecula is a conjunctival lesion, and the endothelium is the inner layer of the cornea; neither relates to tear salt concentration.

7. Which wearing schedule allows wear up to 30 days before removal?

A. Extended wear

B. Daily wear

C. Flexible wear

D. Continuous wear

The concept being tested is how long a contact lens can be worn before it must be removed under different wearing schedules. The schedule that allows wear up to 30 days before removal is continuous wear. This design is intended for extended, uninterrupted use, including overnight wear, for a prolonged period. The idea is that the lens material and care regimen support staying in the eye without daily removal, though actual practice depends on the specific lens and clinician guidance. Daily wear means wearing only during the day and removing at night, so it never reaches long uninterrupted periods. Extended wear permits an extended stretch without removal, but usually shorter than 30 days depending on the lens and guidelines. Flexible wear allows varying patterns of removal and wear, not a fixed long-duration schedule.

8. What is MRD1+MRD2 equal to?

A. Pupil diameter

B. Vertical fissure width equals MRD1 + MRD2

C. Tear film osmolarity

D. Corneal thickness

MRD1 plus MRD2 gives the vertical fissure width, also called the palpebral fissure height. MRD1 is the distance from the corneal light reflex to the upper eyelid margin, and MRD2 is the distance from the corneal light reflex to the lower eyelid margin. Adding these two measurements yields the total vertical opening between the upper and lower eyelids. The other quantities listed—pupil diameter, tear film osmolarity, and corneal thickness—are unrelated to this sum, which is specifically about how tall the eyelid opening is.

9. Which is a common reason a patient may want contact lenses?

A. Hair Color Change

B. Weight Loss

C. Cosmesis

D. Color Vision Correction

Cosmesis refers to cosmetic appeal—the desire to change or enhance the appearance of the eyes. Many people choose contact lenses to alter iris color, intensity, or overall look for fashion, stage, or photography, without changing facial features like glasses would. Hair color change and weight loss have no connection to eyewear, and contact lenses do not correct color vision deficiencies, so they aren't used to fix how colors are perceived. This cosmetic appeal is a common reason people opt for contact lenses.

10. Which group binds water or increases oxygen permeability in contact lenses?

A. Suspended chemical groups

B. Ionic crosslinks

C. Hydrophobic moieties

D. Covalent bonds

In hydrogel contact lenses, how much water the material can hold largely governs how easily oxygen can permeate through it. Oxygen dissolves in the water inside the lens, so more water means more oxygen can be carried through to the eye. Hydrophilic, pendant groups—loose, suspended chemical groups along the polymer chains—draw water into the network and keep it there. This increased water content boosts the oxygen solubility in the lens, raising the overall oxygen permeability. Ionic crosslinks change how the network holds together but don't directly boost water binding. Hydrophobic moieties repel water, reducing water content and thus lowering oxygen permeability. Covalent crosslinks can restrict water uptake by tightening the network, which also tends to decrease permeability. So the groups that best increase water binding—and thereby oxygen permeability—are the hydrophilic pendant groups.

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://softcontactsmatmanufacturing.examzify.com

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