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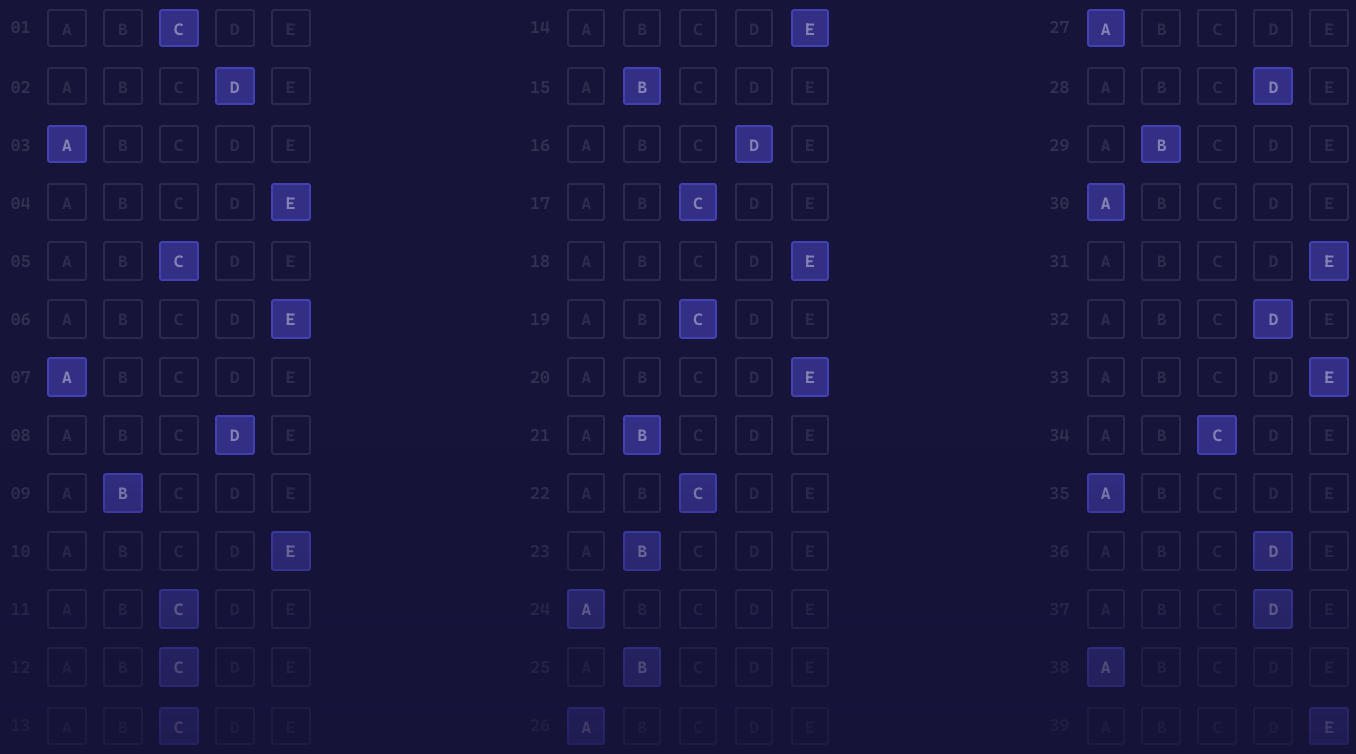


PRACTICE QUESTIONS

## American Board of Opticianry And National Contact Lens Examiners (ABO NCLE) (ABOB)

# NCLAC

Contact Lens Registry Exam - Advanced

| EDITION | QUESTIONS | FORMAT |
|---|---|---|
| Demo | 9 | Limited Edition PDF |

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# Before you begin

## What this is

9 practice questions for American Board of Opticianry And National Contact Lens Examiners (ABO NCLE) (ABOB) `NCLAC`, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

## If something looks wrong

Send us three things and we will check it:

- the exam code, `NCLAC`
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

**QUESTION 1** SINGLE CHOICE

A patient with keratoconus has moderate nipple-type ectasia with the cone apex displaced inferiorly. Which of the following specialty lens designs is generally most appropriate as an initial fitting choice to provide optimal apical clearance and improved visual rehabilitation?

A Spherical soft toric lens

B Standard gas-permeable spherical lens

C Intralimbal scleral lens

**D Single-cut, small-diameter corneal gas-permeable lens specifically designed for keratoconus (e.g., Rose K-style design)**

**ANSWER D**

**WHY** For moderate nipple-type keratoconus, a specially designed small-diameter corneal gas-permeable lens (such as a Rose K-style design) is typically the first-line specialty option. These designs incorporate multi-curve aspheric or quadrant-specific geometries that allow the lens to vault over the inferiorly displaced cone and provide proper apical clearance, which improves comfort and visual acuity. Spherical soft toric lenses do not mask irregular astigmatism effectively, standard spherical GPs tend to bear heavily on the apex in nipple cones, and full scleral lenses are usually reserved for advanced cases, intolerance to corneal GPs, or when substantial apical clearance is otherwise unachievable.

**QUESTION 2** SINGLE CHOICE

A soft contact lens wearer presents with a small, round, whitish corneal infiltrate approximately 1.5 mm in diameter with overlying epithelial staining, moderate conjunctival injection, and mild photophobia. The anterior chamber is quiet. Which condition is the MOST likely diagnosis?

A Peripheral corneal ulcer (marginal keratitis)

B **Sterile (non-infectious) corneal infiltrate**

C Bacterial keratitis

D Acanthamoeba keratitis

**ANSWER** **B**

**WHY** The clinical features described — a small (often <1.5–2 mm), round, whitish infiltrate near the limbus or mid-periphery with overlying epithelial staining, mild symptoms, and a quiet anterior chamber — are most consistent with a sterile (non-infectious) corneal infiltrate. Sterile infiltrates are typically immune-mediated, related to extended wear, hypoxia, or solution reactions, and lack the dense stromal necrosis, significant overlying epithelial defect >1 mm, marked anterior chamber reaction, and severe pain seen in bacterial keratitis. A peripheral marginal keratitis is usually a hypersensitivity reaction to staphylococcal exotoxins adjacent to the limbus, not a mid-peripheral round infiltrate. Acanthamoeba keratitis characteristically produces pseudodendrites, radial perineuritis, and disproportionate pain, often in association with poor hygiene or water exposure.

**QUESTION 3** SINGLE CHOICE

When performing corneal topography in preparation for a rigid gas-permeable (RGP) contact lens fitting, which of the following topographic patterns is most likely to indicate the presence of significant corneal irregularity that may complicate a standard spherical or aspheric RGP fit?

A A symmetric, symmetrically increasing red-to-blue pattern consistent with with-the-rule astigmatism

B A regular, bow-tie pattern with orthogonal meridians of steepening

**C An asymmetric pattern with inferior steepening and skewed radial axes (consistent with forme fruste or early keratoconus)**

D A uniformly blue pattern indicating an excessively flat cornea

**ANSWER** C

**WHY** An asymmetric topographic pattern with inferior steepening and skewed radial axes is the hallmark of forme fruste keratoconus, early keratoconus, or other ectactic corneal conditions. These corneas typically cannot be successfully fit with a standard spherical or single-geometry aspheric RGP because the lens will not align properly with the irregular, decentered cone. A symmetric with-the-rule pattern, a regular orthogonal bow-tie, and a uniformly flat cornea are all considered regular patterns suitable for conventional RGP designs. Recognition of inferior steepening is critical so the fitter can select a specialty design (e.g., keratoconus GP, scleral, or hybrid lens) instead.

**QUESTION 4** SINGLE CHOICE

A patient wearing monthly-replacement silicone hydrogel soft contact lenses reports using a generic multi-purpose solution and storing the lenses in the case for several weeks at a time between occasional weekend wear. Which complication is this patient at GREATEST risk of developing?

A Microbial keratitis from Acanthamoeba due to exposure of the case to tap water

B Contact lens-associated dry eye from excessive lens dehydration

**C Corneal neovascularization and inflammatory complications from poor compliance and biofilm formation**

D Mechanical corneal abrasion from improper lens insertion

**ANSWER C**

**WHY** Storing monthly replacement lenses for several weeks in a multi-purpose solution between rare wear episodes creates a favorable environment for biofilm formation, solution neutralization, and accumulation of debris and microorganisms on the lens surface. This poor compliance pattern most strongly predisposes the patient to inflammatory events, including contact lens-induced peripheral ulcers, contact lens-associated acute red eye (CLARE), and over time, corneal neovascularization due to chronic hypoxia and inflammation. While Acanthamoeba risk is more directly tied to tap water exposure, dry eye from dehydration, and mechanical abrasion from insertion, these are not the primary risks of this particular non-compliance pattern.

**QUESTION 5** SINGLE CHOICE

A patient wearing spherical rigid gas-permeable (RGP) contact lenses reports fluctuating vision and ghosting that worsens throughout the day. Keratometric readings and corneal topography are regular. Slit lamp evaluation reveals that the lenses decenter superiorly with each blink and show apical touch centrally with pooling in the mid-periphery. What is the MOST likely cause of the visual complaint?

A The lens base curve is too steep, causing apical touch and excessive central pooling

**B The lens base curve is too flat, causing the lens to ride high and produce an unstable, decentered fit with central pooling**

C The lens diameter is too small, but the base curve is appropriate

D The lens power is incorrect, producing a residual refractive error

**ANSWER B**

**WHY** A rigid lens that is too flat relative to the cornea has insufficient central alignment and tends to decenter (often superiorly, beneath the upper lid), resulting in an unstable fit. With a flat fit, the central cornea is actually too well covered by the lens (apical bearing) while fluid pools in the mid-periphery because the lens edge lifts away centrally — wait, in classic RGP fitting, a flat-fitting lens demonstrates central bearing (apical touch) with mid-peripheral pooling due to excessive edge lift; a steep lens demonstrates central pooling with inadequate edge lift. The combination of superior decentration with each blink, central apical touch, and mid-peripheral pooling indicates a flat-fitting lens riding on the upper lid. This produces fluctuating, ghosted vision throughout the day. Steepening the base curve (fitting closer to flat K) would worsen the problem; flattening the base curve is not appropriate — the lens must be steepened to align better with the central cornea, and the diameter or peripheral curves must be modified to center the lens properly.

**QUESTION 6** SINGLE CHOICE

Which statement BEST describes the primary fitting principle of a modern scleral lens?

A The lens should rest entirely on the cornea to maximize oxygen transmission

**B The lens should vault the cornea and limbus, with the landing zone resting on the conjunctiva/sclera over the bulbar conjunctival surface and creating a fluid reservoir**

C The lens should land exclusively on the limbus to distribute pressure evenly

D The lens should be fit with apical alignment to the corneal apex with minimal clearance

**ANSWER B**

**WHY** Modern scleral lenses are large-diameter gas-permeable lenses designed to completely vault over the cornea and limbus, landing exclusively on the bulbar conjunctiva and sclera. The space between the back surface of the lens and the cornea is filled with sterile saline or a specially designated filling solution, creating a fluid reservoir that provides continuous corneal hydration and protection. This design is particularly useful for irregular corneas, severe dry eye, and ocular surface disease. Landing on the cornea (option A) is the principle of corneal GPs, not sclerals, and apical alignment (option D) describes conventional corneal GP fitting. Limbal landing only (option C) would cause significant limbal compression and is not a recognized scleral fitting principle.

**QUESTION 7** SINGLE CHOICE

Which of the following lens-care solution components is MOST likely to cause corneal staining and discomfort in a soft contact lens wearer due to its interaction with certain lens materials?

A Polyquaternium-1 (Polyquad) preserved multi-purpose solution

**B Biguanide-based disinfectants such as PHMB in combination with certain silicone hydrogel materials**

C Hydrogen peroxide-based systems with neutralization discs

D Saline solution preserved with sorbic acid

**ANSWER B**

**WHY** Polyhexamethylene biguanide (PHMB)-based multi-purpose solutions have been documented to cause corneal staining and discomfort when used with certain silicone hydrogel lens materials, particularly when the lens material has a higher affinity for uptake of this preservative. This combination can produce solution-induced corneal staining (SICS), typically a diffuse punctate pattern in the mid-periphery, with associated symptoms of dryness and irritation. Polyquad, hydrogen peroxide systems, and preserved saline are generally well tolerated with most soft lens materials and are less commonly implicated in this phenomenon.

**QUESTION 8** MULTIPLE CHOICE

Which of the following structures are evaluated as part of a routine anterior segment contact lens pre-fit examination? (Choose two.)

**A** **Limbal vascular pattern and presence of neovascularization**

**B** **Tear film break-up time (TFBUT) and tear meniscus height**

C Retinal nerve fiber layer thickness

D Posterior vitreous detachment status

**ANSWER** **A** · **B**

**WHY** A comprehensive contact lens pre-fit anterior segment examination includes evaluation of the limbal vascular pattern and any neovascularization, as well as tear film assessment including tear film break-up time and tear meniscus height. These findings directly impact lens material selection (oxygen transmissibility), wearing modality, and the risk of complications. The retinal nerve fiber layer and posterior vitreous status are part of a posterior segment evaluation and are not assessed as part of a routine contact lens anterior segment pre-fit.

**QUESTION 9** MULTIPLE CHOICE

Which of the following findings, when observed at a contact lens follow-up visit, should prompt the practitioner to IMMEDIATELY discontinue lens wear and refer the patient for medical evaluation? (Choose two.)

**A** **A corneal infiltrate >2 mm in diameter with overlying epithelial defect, significant anterior chamber reaction, and pain**

B Circumlimbal injection with a small, white, peripheral corneal infiltrate approximately 0.5 mm in diameter, mild symptoms, and quiet anterior chamber

**C** **Hypopyon with associated stromal infiltrate and marked lid edema**

D Mild conjunctival hyperemia with a clean contact lens and good vision

**ANSWER** **A · C**

**WHY** A corneal infiltrate greater than 2 mm in diameter with an epithelial defect, anterior chamber reaction, and pain is highly suggestive of microbial (bacterial or fungal) keratitis, which requires immediate lens discontinuation and urgent medical/ophthalmologic referral for corneal scraping and culture. The presence of a hypopyon with stromal infiltrate and lid edema indicates severe microbial keratitis or even endophthalmitis risk and similarly demands immediate cessation of lens wear and emergent referral. In contrast, a small peripheral infiltrate with mild symptoms and a quiet anterior chamber is more consistent with a sterile/inflammatory infiltrate, which while requiring modification of wear, is not a same-day emergency. Mild conjunctival hyperemia alone is not an indication for immediate discontinuation.