Ophthalmic Dispensing Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. What is the maximum angle used for a bifocal segment called?

A. Segment height

B. OC height

C. Seg drop

D. Base curve

2. What is indicated if a frame is designed with a retroscopic tilt?

A. The top of the frame extends forward

B. The bottom of the eyewires are in closer than the top

C. The bridge of the frame is tilted back

D. The bridge of the frame is tilted forward

3. If a glasses wearer finds the bifocal too high, what is the suggested action?

A. Remake the lenses with the segment lower

B. Increase the pantoscopic tilt

C. Increase the face form

D. Angle the temples up

4. Where is the prismatic effect verified on a P.A.L.?

A. Fitting cross

B. Lower circle where the near power is verified

C. Dot directly below the fitting cross

D. Upper semicircle

5. When anti-reflective lens coating is applied, what is the thickness of the coating?

A. 3/4 the wavelength of incoming light

B. 1/4 the wavelength of incoming light

C. 3/4 the wavelength of reflected light

D. 1/4 the wavelength of reflected light

6. What characteristic do most single vision CR-39 lens series share?

A. Plus cylinder form

B. A square molded shape

C. Minus cylinder form

D. Minus base curves

7. A temple that is 5 inches from hinge to bend, and 1.5 inches from bend to tip, would be classified as being:

A. 5 inches long

B. 5.75 inches long

C. 6.5 inches long

D. not enough information to determine

8. If one surface of a lens is plano and the other is a plus surface, the lens is referred to as:

A. Plano

B. Biconvex

C. Planoconvex

D. Planoconcave

9. A thermoplastic frame material that is molded instead of stamped out, and therefore returns to its original shape when heated is:

A. Cellulose acetate

B. Cellulose aceto-propionate

C. Optyl

D. Nylon

10. Bicentric grinding is also known as what?

A. Safety bevel

B. Prism axis

C. Slab-off

D. Reading level

Answers

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

Explanations

1. What is the maximum angle used for a bifocal segment called?

A. Segment height

B. OC height

C. Seg drop

D. Base curve

The maximum angle used for a bifocal segment refers to the specific parameter that determines how far down the segment is positioned on the lens. This is commonly known as the segment height. The segment height is crucial for ensuring that the bifocal lens accommodates the user's visual needs effectively, allowing for a clear line of sight through the reading segment when the wearer looks down. When fitting bifocal lenses, it's important to measure this segment height accurately because it affects comfort and the ease of transitioning between the distance and near vision zones. A well-measured segment height helps in placing the bifocal segment at the appropriate distance from the pupil, thus optimizing visual performance for tasks that require near vision. Understanding the purpose and application of segment height is essential in ophthalmic dispensing practice, as it directly impacts the effectiveness of the prescribed lens for the patient's needs.

2. What is indicated if a frame is designed with a retroscopic tilt?

A. The top of the frame extends forward

B. The bottom of the eyewires are in closer than the top

C. The bridge of the frame is tilted back

D. The bridge of the frame is tilted forward

The correct indication of a frame designed with a retroscopic tilt is that the bridge of the frame is tilted back. This design feature enhances the fit and appearance of the eyewear, ensuring that the lenses are optimally positioned in relation to the eyes. In practice, when a frame has a retroscopic tilt, it allows for better alignment of the optical center of the lenses with the wearer's line of sight, a critical factor for visual comfort and effective vision correction. By having the bridge tilted back, the entire frame typically leans slightly, bringing the top portion forward; however, this top extension is a feature of how the tilt functions rather than a direct consequence of the "retroscopic" terminology itself. This understanding is crucial for optical professionals as they assist customers in choosing frames that not only suit their style but also align well with their visual needs and anatomical requirements.

3. If a glasses wearer finds the bifocal too high, what is the suggested action?

A. Remake the lenses with the segment lower

B. Increase the pantoscopic tilt

C. Increase the face form

D. Angle the temples up

When a glasses wearer finds the bifocal segment too high, it's important to address the fit of the lenses relative to the wearer's line of sight. Increasing the pantoscopic tilt can help by angling the lenses closer to the wearer's face. This adjustment allows the segment of the bifocal to be positioned better with respect to where the wearer naturally looks, potentially improving their viewing experience without needing to remake the lenses. The pantoscopic tilt refers to the angle between the frame front and the vertical plane of the face, influencing the lens position in relation to the eyes. By enhancing this tilt, the segment of the bifocal may effectively align better with the user's gaze when looking down, thus making the transition between vision zones smoother. The other options suggest different changes that may not directly address the positioning issue of the bifocal segment as effectively as adjusting the tilt would. For instance, remaking the lenses can be more time-consuming and costly and may not guarantee alignment improvement without understanding the specific facial geometry. Increasing face form affects the lens curvature rather than segment placement, and angling the temples up focuses more on comfort and fit rather than directly resolving the height of the bifocal segment.

4. Where is the prismatic effect verified on a P.A.L.?

A. Fitting cross

B. Lower circle where the near power is verified

C. Dot directly below the fitting cross

D. Upper semicircle

The prismatic effect of a progressive addition lens (P.A.L.) is verified at the dot directly below the fitting cross. This location is significant because it is where the optical alignment is typically assessed for optimal visual function. The fitting cross indicates the center of the distance portion of the lens, where the prescription is calibrated for distance vision. Below this point, the lens transitions into the near vision zone, and the prismatic effect can be most clearly evaluated. This assessment is critical for ensuring that the wearer's visual experience is comfortable and that the lens is correctly tailored to their specific needs. If the prismatic effect is not verified correctly at this point, it could lead to visual disturbances, such as double vision or discomfort, particularly when shifting between distances. The lower area where the near power is verified, while important for determining the optical power for reading and near activities, does not provide the same level of reference for the desired vertical alignment and prismatic effect as the dot below the fitting cross does. Understanding the role of the fitting cross and associated points on a P.A.L. lens is essential for precise dispensing and ensuring customer satisfaction with their eyewear.

5. When anti-reflective lens coating is applied, what is the thickness of the coating?

A. 3/4 the wavelength of incoming light

B. 1/4 the wavelength of incoming light

C. 3/4 the wavelength of reflected light

D. 1/4 the wavelength of reflected light

The thickness of an anti-reflective lens coating is designed to be specifically one-quarter of the wavelength of the incoming light. This thickness is critical because it allows for destructive interference of light waves that reflect off the surface of the lens. When light hits the lens, some light will reflect off the top surface of the coating, while some light penetrates the coating and reflects off the lens surface beneath it. By setting the thickness of the coating to one-quarter of the wavelength of the incoming light, the reflected waves from the top surface and the lens surface are out of phase with each other by 180 degrees, causing them to cancel each other out. This results in a significant reduction of reflected light, which enhances clarity, contrast, and overall visual quality for the wearer. This principle of interference is a fundamental aspect of optics and is crucial for maximizing the benefits of an anti-reflective coating on lenses.

6. What characteristic do most single vision CR-39 lens series share?

A. Plus cylinder form

B. A square molded shape

C. Minus cylinder form

D. Minus base curves

Most single vision CR-39 lens series share the characteristic of having a minus cylinder form. This form is particularly common for correcting myopia, where a concave lens is required to diverge light rays for proper focus on the retina. In the context of single vision lenses, which are designed for one specific focal distance, the curvature of the lens is critical for achieving the desired optical power. A minus cylinder form allows for a uniform approach to lens manufacturing, addressing the majority of prescriptions for nearsightedness. This standardization contributes to efficient production and proficiency in lenses designed for this common visual impairment. While various designs and forms exist, single vision lenses primarily cater to a wide range of myopic prescriptions with this minus cylinder configuration, making it a predominant feature in the CR-39 lens series. Other options, such as plus cylinder or square molded shapes, are less common in this category, as they pertain mostly to different types of lens configurations or corrective needs.

7. A temple that is 5 inches from hinge to bend, and 1.5 inches from bend to tip, would be classified as being:

A. 5 inches long

B. 5.75 inches long

C. 6.5 inches long

D. not enough information to determine

To determine the total length of the temple of the eyewear, you need to add the length from the hinge to the bend with the length from the bend to the tip. The distance from the hinge to the bend is 5 inches, and the distance from the bend to the tip is 1.5 inches. When you add these two measurements together – 5 inches plus 1.5 inches – you arrive at a total of 6.5 inches for the complete length of the temple. This total length is crucial for proper fit and comfort when dispensing eyewear, as it influences how the glasses will sit on the wearer's head and how securely they will stay in place. Understanding the complete measurement of the temple helps in ensuring that the eyewear meets the individual's comfort and functional needs. Consequently, the correct classification, based on the measurements provided, is 6.5 inches long.

8. If one surface of a lens is plano and the other is a plus surface, the lens is referred to as:

A. Plano

B. Biconvex

C. Planoconvex

D. Planoconcave

A lens that has one plano (flat) surface and one convex surface is described as planoconvex. The term "planoconvex" precisely identifies the lens's shape and the influence of its surfaces on the light that passes through it. The plano surface does not alter the path of light, while the convex surface converges light rays towards a focal point, creating a positive power in the lens. In contrast, other terms like "biconvex" refer to a lens with two outward-curving surfaces, which is not applicable here as only one surface is curved. The term "plano" alone would imply a lens that could either be plano one side or both sides without any curvature, while "planoconcave" describes a lens with one flat and one inward-curving surface, leading to divergent light rays. Thus, the combination of one flat and one convex surface results specifically in a planoconvex lens.

9. A thermoplastic frame material that is molded instead of stamped out, and therefore returns to its original shape when heated is:

A. Cellulose acetate

B. Cellulose aceto-propionate

C. Optyl

D. Nylon

The thermoplastic frame material that is molded and retains its shape when heated is Optyl. This unique characteristic is due to its molecular structure, which allows it to be reshaped with heat and return to its original form once cooled. This feature provides flexibility in design and adjustments, making Optyl a popular choice in eyewear manufacturing. Optyl is also lightweight, durable, and hypoallergenic, which enhances its appeal for both manufacturers and consumers. The ability to be molded rather than stamped also allows for more intricate designs and customization options, which is an advantage in creating stylish eyewear. In contrast, other materials listed have different properties. Cellulose acetate, while a common choice for frames, cannot return to its original shape once it has been shaped, as it is typically stamped. Cellulose aceto-propionate is a similar material but still does not possess the thermoplastic qualities of Optyl. Nylon is strong and lightweight but is not known for the same heat reshaping characteristics that define Optyl.

10. Bicentric grinding is also known as what?

A. Safety bevel

B. Prism axis

C. Slab-off

D. Reading level

Bicentric grinding is a specialized technique used in the fabrication of lenses, particularly for bifocal or multifocal eyewear. This grinding method is specifically designed to create a specific type of optical surface that helps in aligning the optical centers of the upper and lower segments of the lenses. The purpose of bicentric grinding is to compensate for vertical imbalance in prescriptions, often seen in lenses with different powers in each segment. The term "slab-off" refers directly to this grinding technique, as it involves cutting a slight prism into the lower part of the lens, thus providing a smoother transition and reducing visual distortion for the wearer. This technique is especially beneficial for those who have significant differences in the prescription of each eye, as it helps ensure that the optical centers are properly aligned and that the wearer can look through the most appropriate part of the lens for their vision needs. Other terms listed, such as safety bevel, prism axis, and reading level, pertain to different concepts within optical dispensing and do not describe the bicentric grinding process. Understanding these distinctions helps clarify why "slab-off" is the correct answer regarding bicentric grinding.