PRACTICE EXAM 8

1. A patient asks, "What does the first number in my prescription, the +2.00, actually mean?" The optician's most accurate answer is that it is the:

A. Cylinder power correcting astigmatism

B. Sphere power, the baseline correction in all meridians

C. Axis, the orientation of the cylinder

D. Add power used only for reading

2. A patient asks why their –7.00 lens is so much thicker at the edge than their friend's –1.00 lens. The optician explains that:

A. Higher minus power increases center thickness

B. The lens material was made denser

C. Higher minus power increases edge thickness

D. The base curve was flattened

3. A patient asks, "Why do you keep the right eye's prescription first?" The optician explains that, by convention:

A. The stronger eye is always listed first

B. OD (the right eye) is written before OS (the left eye)

C. The near power is listed before the distance power

D. The cylinder is always written before the sphere

4. A patient asks how a plus lens helps their farsightedness. The optician explains that a plus lens:

A. Diverges light to move the focus backward

B. Leaves the light unchanged

C. Converges light onto the retina

D. Splits light into polarized components

5. A patient asks what "diopter" means. The optician explains it is the unit of lens power, defined as:

A. The lens thickness in millimeters

B. The reciprocal of the focal length in meters

C. The index of refraction of the material

D. The curvature of the front surface

6. A patient asks why their new high-index lenses seem to reflect more. The optician explains that higher-index materials:

A. Reflect less light than standard plastic

B. Reflect more light at their surfaces

C. Have a higher Abbe value

D. Cannot accept any coating

7. A patient asks what the cylinder axis "x 090" tells the lab. The optician explains it gives the:

A. Amount of cylinder power in diopters

B. Total sphere power needed

C. Orientation of the cylinder in degrees

D. Near add power required

8. A patient asks why thinner lenses are recommended for their strong prescription. The optician explains a higher index helps because it:

A. Bends light more strongly, needing less thickness

B. Lowers the lens weight by adding material

C. Raises the Abbe value automatically

D. Eliminates all surface reflection

9. A patient asks what the "Abbe value" the optician mentioned controls. The optician explains it relates to:

A. Dispersion and color fringing

B. Scratch resistance

C. Ultraviolet blocking

D. Impact resistance

10. A patient asks how the optician knows how far to move each lens's optical center. The optician explains it depends on comparing the frame PD with the patient's:

A. Vertex distance

B. Temple length

C. Lens base curve

D. Pupillary distance

11. A patient asks why their old "2.00" power could be wrong without a sign. The optician explains that an unsigned power is ambiguous because:

A. The axis cannot be determined

B. The add power is missing

C. +2.00 and –2.00 are opposite corrections

D. The prism base is unknown

12. A patient asks what makes a progressive lens "no-line." The optician explains it provides:

A. A seamless, gradual change in power with no segment line

B. A single fixed power throughout

C. A visible D-shaped segment

D. Two distinct trifocal lines

13. A patient asks why their reading number "+2.50 add" matters. The optician explains the add is:

A. The distance correction for far vision

B. The extra plus power for near vision

C. The prism for eye alignment

D. The cylinder for astigmatism

14. A patient asks how a prism in their glasses helps double vision. The optician explains a prism:

A. Darkens the lens automatically

B. Increases the lens thickness for support

C. Sharpens focus at the optical center

D. Shifts the image so the eyes can fuse it

15. A patient asks why their lab "transposed" the prescription. The optician explains transposition:

A. Changes the actual correction the lens provides

B. Adds prism to the prescription

C. Rewrites the same lens in the other cylinder form

D. Converts the lens to a progressive

16. A patient asks why the optician measured each eye's PD separately. The optician explains monocular PDs:

A. Are faster and need no instrument

B. Measure vertex distance at the same time

C. Improve accuracy when the face is asymmetric

D. Eliminate the need for a pupillometer

17. A patient asks what an "anti-reflective coating" will do for night driving. The optician explains it:

A. Reduces glare and reflections, improving clarity

B. Darkens the lens in headlights

C. Makes the lens fully scratch-proof

D. Corrects the prescription automatically

18. A patient asks why their friend with a strong plus prescription has "magnified-looking" eyes. The optician explains that:

A. Plus lenses magnify the apparent image

B. Minus lenses magnify the image

C. The Abbe value is too high

D. The frame color causes the effect

19. A patient asks how the optician checks that the finished glasses match the order. The optician explains they verify the power on a:

A. Lens clock

B. Pupillometer

C. Distometer

D. Lensmeter

20. A patient asks why their lab used a "back vertex power" reading. The optician explains spectacle power is specified at the:

A. Back surface, nearest the eye

B. Front surface of the lens

C. Geometric center of the box

D. Beveled edge of the lens

21. A patient asks what a polarized lens does that a plain dark lens does not. The optician explains it:

A. Darkens automatically in UV

B. Blocks horizontal glare reflected off water and roads

C. Corrects astigmatism

D. Eliminates the need for a prescription

22. A patient asks whether their dark fashion sunglasses, with no UV rating, are safe. The optician explains they can be harmful because they:

A. Reflect all light away from the eye

B. Permanently correct the refractive error

C. Increase the eye's impact resistance

D. Dilate the pupil while admitting UV light

23. A patient asks why polycarbonate is recommended for their child. The optician explains it is chosen mainly for its:

A. Impact resistance and safety

B. Highest-available Abbe value

C. Thinnest-possible profile

D. Lowest cost among all materials

24. A patient asks what causes the "color fringing" they see at the edges of their high-index lenses. The optician explains it is due to the material's:

A. Higher Abbe value

B. Thicker center

C. Lower Abbe value

D. Stronger scratch coating

25. A patient asks why they need a separate "intermediate" zone for computer work. The optician explains a trifocal or progressive adds a zone for:

A. The smallest near print

B. Distant road signs

C. Arm's-length distances like a monitor

D. Peripheral motion only

26. A patient asks how their myopia is corrected. The optician explains a minus lens:

A. Diverges light to move the focus back onto the retina

B. Converges light forward of the retina

C. Blocks ultraviolet light

D. Magnifies the retinal image

27. A patient asks which part of the eye does most of the focusing. The optician explains it is the:

A. Crystalline lens

B. Cornea

C. Vitreous humor

D. Aqueous humor

28. A patient asks why they suddenly need reading glasses in their mid-forties. The optician explains this is:

A. Presbyopia, the age-related loss of accommodation

B. A clouding of the lens called cataract

C. An elevation of eye pressure

D. A misalignment of the two eyes

29. A patient asks why their night and side vision feel different from daytime detail. The optician explains that:

A. Rods handle dim-light and peripheral vision; cones handle color and detail

B. Cones handle dim-light and peripheral vision

C. Rods provide sharp daytime color vision

D. The cornea changes function at night

30. A patient asks what glaucoma does to vision. The optician explains it characteristically causes:

A. Sudden central blurring only

B. Gradual, painless peripheral vision loss

C. Improved night vision

D. A temporary color shift

31. A patient asks how cataract affects the eye. The optician explains it is:

A. An elevation of eye pressure

B. A misalignment of the eyes

C. A clouding of the crystalline lens

D. An unequal corneal curvature

32. A patient asks why their vision keeps changing since their diabetes diagnosis. The optician explains diabetes can cause:

A. A permanently fixed refractive error

B. Fluctuating, shifting vision

C. Immunity to cataract

D. Improved distance acuity

33. A patient asks what macular degeneration affects. The optician explains it damages:

A. The peripheral field, sparing the center

B. The lower field only

C. The central field, used for detailed vision

D. The entire field equally

34. A patient asks what "accommodation" means. The optician explains it is the:

A. Widening of the pupil in dim light

B. Inward turning of the eyes for distance

C. Bending of light by the cornea

D. Crystalline lens changing shape to focus on near objects

35. A patient asks what the difference is between their "lazy eye" and a turned eye. The optician explains amblyopia is:

A. A clouding of the lens

B. An elevation of eye pressure

C. Reduced vision in an eye not correctable by lenses alone

D. A localized blind spot

36. A patient asks why their bulging eyes might relate to their thyroid. The optician explains exophthalmos is:

A. A clouding of the lens

B. A loss of central vision

C. A forward protrusion associated with thyroid disease

D. An elevation of eye pressure

37. A patient asks what "astigmatism" means for their vision. The optician explains it results from:

A. The lens clouding with age

B. Elevated pressure in the eye

C. A misalignment of the two eyes

D. Unequal curvature focusing light to two lines

38. A patient asks why their two eyes "don't team up" well at near. The optician explains convergence is the:

A. Outward rotation for distance

B. Oscillation of the eyes

C. Clouding of the lens

D. Inward rotation of the eyes for near targets

39. A patient asks what their "20/40" acuity means. The optician explains the bottom number indicates:

A. A percentage of normal vision

B. The distance a normal eye reads what they read at 20 feet

C. The lens power needed

D. The testing time in seconds

40. A patient asks why a contact lens power differs from their strong spectacle power. The optician explains it is because the contact sits:

A. Farther from the eye, needing more power

B. At the same distance, needing identical power

C. On the eyelid, needing prism

D. Closer to the eye, changing the effective power

41. A patient asks why their racquetball glasses must be polycarbonate. The optician explains it is chosen for its:

A. Highest Abbe value

B. Impact resistance for safety

C. Thinnest profile

D. Lowest cost

42. A patient asks what edge treatment their semi-rimless frame's lens needs. The optician explains it must be:

A. Beveled for full-rim mounting

B. Drilled with holes

C. Grooved to seat the nylon cord

D. Left flat and unfinished

43. A patient asks why their photochromic lenses barely darken in the car. The optician explains that:

A. They respond only to infrared heat

B. They are defective and need replacing

C. They darken more in cold only

D. Windshields block most of the activating UV

44. A patient with a nickel allergy asks what frame to choose. The optician recommends:

A. A nickel-rich base alloy

B. The same alloy with thin plating

C. An untreated base metal

D. Titanium or another hypoallergenic material

45. A patient asks what an anti-reflective coating does. The optician explains it:

A. Darkens the lens in sunlight

B. Reduces reflections and increases light to the eye

C. Corrects astigmatism

D. Makes the lens unbreakable

46. A patient asks why their over-the-counter readers cause eyestrain. The optician explains OTC readers:

A. Contain a progressive corridor

B. Always have different powers per eye

C. Are made of high-index material

D. Have a fixed optical-center spacing that may not match the PD

47. A patient asks what material best prevents cracking in their rimless drill-mount frame. The optician recommends:

A. Polycarbonate or Trivex

B. Crown glass

C. Standard CR-39

D. Untempered glass

48. A patient asks what a "gradient tint" looks like. The optician explains it is:

A. Uniform in density throughout

B. Color-changing in sunlight

C. Darker at the top and lighter at the bottom

D. A filter blocking only horizontal glare

49. A patient asks what makes an executive bifocal different. The optician explains its near segment:

A. Is a small round shape

B. Spans the full width of the lens

C. Changes power continuously

D. Is absent entirely

50. A patient with macular degeneration asks what could help them read. The optician suggests:

A. A routine scratch coating

B. A standard distance lens

C. A basic anti-reflective coating

D. An electronic video magnifier

51. A patient asks how low vision aids help. The optician explains they primarily provide:

A. Surgical repair of the retina

B. Magnification and contrast enhancement

C. Reversal of the disease

D. Restoration of 20/20 acuity

52. A patient asks which lens darkens outdoors and clears indoors on its own. The optician recommends a:

A. Solid sunglass tint

B. Polarized lens

C. Clear lens with AR

D. Photochromic lens

53. A patient asks why their dark, non-UV sunglasses might be worse than nothing. The optician explains the darkness:

A. Reflects all light away

B. Permanently corrects the Rx

C. Dilates the pupil while UV still reaches the eye

D. Increases the lens impact resistance

54. A patient asks which frame allows the most bridge adjustment later. The optician recommends:

A. A metal frame with adjustable nose pads

B. A one-piece molded plastic frame

C. A fixed saddle-bridge plastic frame

D. A fixed keyhole-bridge plastic frame

55. A patient asks why a wide, full-width near area is best for hours of drafting. The optician recommends:

A. A small round-segment bifocal

B. A progressive in a shallow frame

C. A pair of OTC readers

D. An executive-style bifocal

56. A patient asks what makes titanium a premium frame choice. The optician explains it is:

A. The heaviest available material

B. A nickel-rich alloy

C. An untreated base metal

D. Lightweight, strong, and hypoallergenic

57. A patient asks why they should confirm UV protection even on dark lenses. The optician explains that:

A. A dark tint always guarantees UV protection

B. UV blocking is impossible in tinted lenses

C. UV protection is a separate property to confirm

D. Only mirrored lenses can block UV

58. A patient asks why their strong-plus glasses make their eyes look large, and what helps. The optician recommends:

A. A steeper base curve

B. A larger lens blank

C. An aspheric lens design

D. A thicker lens center

59. A patient asks what edge a full-rim frame's lens needs. The optician explains it is:

A. A drilled hole

B. A standard bevel

C. A groove for a cord

D. A flat, unfinished edge

60. A patient asks why high-index lenses are suggested for a small rimless frame. The optician explains they provide:

A. A guaranteed higher Abbe value

B. A thinner, more cosmetically acceptable lens

C. The elimination of all reflections

D. Added weight for stability

61. A patient asks what their lifestyle has to do with lens choice. The optician explains that:

A. Only frame color depends on lifestyle

B. The prescription alone dictates the lens

C. Working distances and daily tasks drive lens selection

D. Lifestyle has no bearing on lenses

62. A patient asks what tool measures the curve of their lens surface. The optician names the:

A. Pupillometer

B. Distometer

C. Circumference gauge

D. Lens clock

63. A patient asks how the optician finds the gap between the lens and their eye. The optician names the:

A. Lens clock

B. Distometer

C. Pupillometer

D. Circumference gauge

64. A patient asks how their PD was measured so precisely. The optician explains the corneal reflex pupillometer:

A. Reads the lens base curve

B. Aligns to the light reflex on each cornea

C. Measures vertex distance simultaneously

D. Requires no patient cooperation

65. A patient asks how the optician verifies the reading add. The optician explains the add equals:

A. The near reading minus the distance reading

B. The near reading alone

C. The distance reading alone

D. The two readings multiplied

66. A patient asks why their lens clock reading on a high-index lens was treated cautiously. The optician explains the lens clock is:

A. Unable to read curvature at all

B. A PD-measuring device

C. Calibrated for one specific index

D. A prism-only device

67. A patient asks what indicates prism on the lensmeter. The optician explains it is shown by:

A. A blurred target that cannot focus

B. The axis wheel refusing to turn

C. A change in eyepiece magnification

D. The target displaced from the reticle center

68. A patient asks why the optician warmed the plastic frame before adjusting. The optician explains plastic frames must be:

A. Warmed so they bend without cracking

B. Cooled in cold water first

C. Frozen overnight to harden

D. Bent while completely cold

69. A patient asks why padded pliers were used on their frame. The optician explains the nylon jaws:

A. Protect the frame finish from marring

B. Apply greater bending force

C. Heat the frame faster

D. Measure the frame dimensions

70. A patient asks what tool measures the lens's overall size for edging. The optician names the:

A. Lens clock

B. Circumference (lens) gauge

C. Distometer

D. Pupillometer

71. A patient asks why metal frames don't get heated like plastic ones. The optician explains metal frames are generally:

A. Frozen before bending

B. Warmed to a high temperature first

C. Soaked in solvent

D. Adjusted cold at room temperature

72. A patient asks what tool angles the nose pads on their metal frame. The optician names the:

A. Cutting pliers

B. Pad-adjusting pliers

C. Lens clock

D. Distometer

73. A patient asks why their lens is placed "back-surface in" on the lensmeter. The optician explains it ensures the reading is the:

A. Back vertex power, the spectacle standard

B. Front vertex power

C. Surface curvature power

D. Equivalent air power

74. A patient asks what a "centered target with no displacement" on the lensmeter means. The optician explains it indicates reading through the:

A. Thickest edge

B. Segment line

C. Optical center

D. Bevel apex

75. A patient asks what a digital measurement system captures. The optician explains it records:

A. The lens material's Abbe value

B. PD, seg height, pantoscopic tilt, and vertex distance

C. Only the back vertex power

D. Only the lens base curve

76. A patient asks what calipers are used for. The optician explains they measure:

A. Lens thickness and small linear dimensions

B. Back vertex power

C. Pupillary distance

D. Ultraviolet transmission

77. A patient asks how an automatic lensmeter differs from the manual one. The optician explains it:

A. Displays the readings electronically

B. Measures only front vertex power

C. Cannot read cylinder or axis

D. Needs no lens inserted

78. A patient asks what round-nose pliers are for. The optician explains they:

A. Cut the nylon cord

B. Form curves and bends in metal components

C. Read the lens base curve

D. Measure seg height

79. A patient asks why their glasses sit unevenly with one lens tilted. The optician first suspects:

A. An incorrect lens material

B. A defective coating

C. Frame misalignment needing adjustment

D. An expired prescription

80. A patient asks what tool measures the surface curve in diopters. The optician names the:

A. Distometer

B. Pupillometer

C. Circumference gauge

D. Lens clock

81. A patient asks why their new glasses, verified correct, still give headaches. The optician explains the next thing to check is the:

A. Lens tint density

B. Coating brand

C. Frame color

D. PD and optical-center placement

82. A patient asks why the floor "swims" in new glasses that verify correct. The optician explains it likely reflects a change in the:

A. Base curve from the previous pair

B. Lens tint

C. Temple length

D. Coating type

83. A patient asks why their frame keeps sliding down. The optician explains they will check the fitting triangle's:

A. Lens anti-reflective coating

B. Lens base curve only

C. Lens material index

D. Bridge/nose-pad fit and temples

84. A patient asks if the mild side blur in their first progressives is a defect. The optician explains it is:

A. Expected adaptation to the design

B. A definite power error

C. A coating defect

D. A frame-material error

85. A patient asks why the optician sets the bifocal line where they do. The optician explains for a flat-top the segment top sits at the:

A. Center of the pupil

B. Lower eyelid margin

C. Upper frame edge

D. Eyebrow line

86. A patient asks why their reading area in new progressives sits too low. The optician explains the likely error is the fitting cross was placed:

A. At the pupil center correctly

B. Too high on the lens

C. Within tolerance properly

D. Too low relative to the pupil

87. A patient asks what "pantoscopic tilt" is. The optician explains it is the angle at which:

A. The frame curves horizontally around the face

B. The temples bend behind the ears

C. The lower edge of the lens sits closer to the face

D. The lens rotates about its center

88. A patient asks why their new wrap-around sport frame might distort vision. The optician explains high wrap requires lenses that are:

A. Made thicker only

B. Left uncoated

C. Cut to a smaller blank

D. Optically compensated for the wrap angle

89. A patient asks why double vision can occur even when the power is right. The optician explains it likely reflects a:

A. Defective scratch coat

B. Centration error inducing prism

C. Incorrect tint density

D. Expired warranty

90. A patient asks why they see clearly far and near but not at arm's length. The optician explains their bifocal lacks a:

A. Stronger near add

B. Darker tint

C. Larger eye size

D. Dedicated intermediate zone

91. A patient asks what the optician aims for by centering the lenses correctly. The optician explains the goal is to:

A. Place the optical center before the pupil and avoid induced prism

B. Increase scratch resistance

C. Darken the lens automatically

D. Raise the Abbe value

92. A patient asks why their strong-plus glasses feel "off" when worn farther from the eyes. The optician explains the increased vertex distance makes the lens deliver:

A. Exactly the prescribed power

B. More minus than prescribed

C. Less effective plus power than intended

D. No change at all

93. A patient asks why anisometropia bothers them only when reading. The optician explains the unequal prism arises when:

A. Looking straight ahead through the optical centers

B. The eyes gaze below the optical centers to read

C. Both eyes are closed

D. The frame is perfectly level

94. A patient asks what fabrication fix helps their reading-level vertical imbalance. The optician explains a common remedy is a:

A. Larger frame eye size

B. Slab-off applied to one lens

C. Heavier anti-reflective coating

D. Steeper base curve on both lenses

95. A patient asks why a smaller frame was suggested for their strong minus Rx. The optician explains, beyond high index, it:

A. Reduces edge thickness when well centered

B. Increases the magnification of the eyes

C. Widens the near reading field

D. Raises the lens Abbe value

96. A patient asks what determines where their optical centers go. The optician explains it is the:

A. Lens base curve

B. Vertex distance

C. Pupillary distance

D. Temple length

97. A patient asks why a deep frame was chosen for their progressives. The optician explains progressives need adequate:

A. Temple length

B. Vertical (B) measurement depth

C. Bridge width only

D. Effective-diameter reduction

98. A patient asks what the optician will do first about their complaint of new-glasses discomfort. The optician explains the first step is to:

A. Immediately remake the lenses

B. Blame the prescriber's Rx

C. Replace the frame style

D. Verify the lenses against the prescription

99. A patient asks why the optician asked about night driving before recommending a coating. The optician explains it points toward:

A. A dark solid tint for all conditions

B. A heavily mirrored lens

C. An anti-reflective coating to reduce glare

D. A smaller frame eye size

100. A patient asks why their bifocal seg blocks their distance view. The optician explains it was set:

A. Too high relative to the lower lid

B. At the correct lower-lid level

C. Within tolerance properly

D. Too low on the lens

101. A patient asks how the optician confirms the finished lenses are acceptable. The optician explains a lens passes when each parameter is:

A. Exactly equal to every prescribed number

B. Within any deviation the optician prefers

C. Matched on sphere power only

D. Within the allowed ANSI Z80 tolerance

102. A patient asks which agency requires their everyday lenses to be impact resistant. The optician names the:

A. FDA

B. OSHA

C. EPA

D. HIPAA

103. A patient asks what protects the privacy of their prescription and records. The optician explains it is:

A. ANSI Z80

B. The EPA waste rule

C. The FDA drop-ball test

D. HIPAA

104. A patient asks why their welding eyewear can't just be ordinary glasses. The optician explains the duty to warn requires noting that dress lenses are:

A. Not rated for occupational hazards

B. Identical to safety eyewear

C. Automatically impact-proof for welding

D. Exempt from all standards

105. A patient asks what standard governs the safety glasses for their workshop. The optician names:

A. ANSI Z87

B. ANSI Z80

C. The EPA disposal rule

D. The HIPAA privacy rule

106. A patient asks whether they can get a copy of their own prescription. The optician explains the patient is generally:

A. Denied access to their own records

B. Limited to a verbal summary

C. Entitled to a copy of their own prescription

D. Required to use a third-party intermediary

107. A patient asks why their strong cylinder needs a tighter axis tolerance. The optician explains that under ANSI Z80:

A. Strong cylinders are easier to grind

B. A given axis error causes more blur with a strong cylinder

C. Weak cylinders demand more precision

D. Axis tolerance is unrelated to cylinder power

108. A patient asks what ANSI Z80 actually sets standards for. The optician explains it covers:

A. Workplace pathogen handling

B. Ophthalmic product tolerances

C. Environmental waste disposal

D. Patient record privacy

109. A patient asks if their fashion sunglasses are okay for a hazardous task. The optician must warn that the eyewear:

A. Meets every occupational standard

B. Permanently corrects the Rx

C. Is not rated as occupational safety eyewear

D. Increases impact protection automatically

110. A patient asks who, besides themselves, can receive a copy of their record. The optician explains release to a third party is allowed only:

A. As permitted by HIPAA or with the patient's consent

B. Whenever staff find it convenient

C. By posting it publicly

D. Without any restriction

111. A patient asks whether a dark tint guarantees UV protection. The optician explains:

A. A dark tint always guarantees UV protection

B. UV blocking is impossible in tints

C. Only mirrored lenses block UV

D. UV protection is a separate property to confirm

112. A patient asks what the "duty to warn" means for them. The optician explains it is the obligation to:

A. Inform patients of product limitations and proper use

B. Guarantee the highest Abbe value

C. Reduce the lens edge thickness

D. Eliminate the need for safety standards

113. A patient asks which standard covers their sports goggles, as opposed to workshop glasses. The optician names:

A. ANSI Z80

B. HIPAA

C. ASTM

D. The EPA rule

114. A patient asks how the FDA's and OSHA's roles differ for eyewear. The optician explains:

A. The FDA sets the dress-lens impact rule; OSHA governs workplace safety

B. The FDA governs only workplace safety

C. OSHA sets the dress-lens drop-ball rule

D. Both regulate only patient privacy

115. A patient asks why their electronic record must be kept secure. The optician explains the EMR system must comply with:

A. The ANSI Z80 tolerance standard

B. The FDA drop-ball test

C. The EPA waste rule

D. HIPAA privacy and security rules

116. A patient asks who handles disposal of the lab's chemical waste rules. The optician explains it is governed by the:

A. HIPAA privacy rule

B. FDA drop-ball rule

C. EPA

D. ANSI Z80

117. A patient asks whether their everyday glasses are safe for racquetball. The optician explains they should instead use:

A. The same glasses with a darker tint

B. OTC readers for the activity

C. ASTM-rated sports eyewear, with a warning about the limitation

D. The same glasses without comment

118. A patient asks what is meant by their prescription being "protected health information." The optician explains it means it is:

A. Safeguarded under HIPAA and released only as permitted

B. Public information freely shared

C. Workplace safety data

D. Environmental compliance data

119. A patient asks what "within tolerance" means for their finished lenses. The optician explains it means each parameter:

A. Matches every prescribed number exactly

B. Deviates by any amount the optician allows

C. Falls within the allowed ANSI Z80 deviation

D. Is checked only on the sphere power

120. A patient asks why the optician won't dispense ordinary glasses for arc welding. The optician explains the professional duty is to:

A. Dispense them without comment

B. Warn that they are not occupationally rated and recommend proper eyewear

C. Add a darker tint to make them safe

D. Substitute OTC readers

121. A patient asks what the cornea's main job is in focusing. The optician explains it provides:

A. The largest share of the eye's refracting power

B. The drainage of tears

C. The control of pupil size

D. The internal pressure of the eye

122. A patient asks what the iris does. The optician explains it:

A. Converts light into neural signals

B. Refracts light onto the lens

C. Controls the amount of light entering through the pupil

D. Maintains the eye's internal pressure

123. A patient asks how a phoria differs from a constant eye turn. The optician explains a phoria is:

A. A clouding of the lens

B. A loss of central vision

C. An elevation of eye pressure

D. A latent tendency controlled by fusion

124. A patient asks what the retina does. The optician explains it:

A. Controls the pupil diameter

B. Refracts light onto the cornea

C. Maintains the eye's pressure

D. Converts light into neural signals

125. A patient asks what the tear film does for their eyes. The optician explains it:

A. Controls the pupil size

B. Keeps the cornea smooth, clear, and nourished

C. Focuses light onto the retina

D. Drains aqueous humor from the eye

Answer Key & Full Explanations

1. B — Sphere power, the baseline correction in all meridians. The first value in an Rx is the sphere, the baseline power acting in every meridian before the cylinder is added. It corrects the overall hyperopia or myopia.

2. C — Higher minus power increases edge thickness. A minus lens is thin at the center and thick at the edges, with edge thickness growing as minus power increases. This is why strong myopes benefit from smaller frames and higher index.

3. B — OD (the right eye) is written before OS (the left eye). By universal convention the right eye (OD) is listed before the left eye (OS) in every prescription. This ordering prevents transposing the two corrections.

4. C — Converges light onto the retina. A plus (convex) lens converges light to bring the hyperopic eye's focus forward onto the retina. This convergence is the defining corrective action for farsightedness.

5. B — The reciprocal of the focal length in meters. The diopter is the unit of lens power, defined as 1 divided by the focal length in meters. Shorter focal lengths indicate stronger lenses.

6. B — Reflect more light at their surfaces. Higher-index materials reflect more light, which is why anti-reflective coatings benefit them most. The added reflection slightly reduces transmission to the eye.

7. C — Orientation of the cylinder in degrees. The axis is a direction from 1 to 180 degrees describing the cylinder's orientation, not a power. Confusing axis with power leads to predictable errors.

8. A — Bends light more strongly, needing less thickness. A higher index bends light more strongly, so less lens thickness achieves the same power. This is the cosmetic advantage of high-index materials.

9. A — Dispersion and color fringing. The Abbe value quantifies a material's dispersion and therefore its chromatic aberration (color fringing). A lower Abbe value means more fringing.

10. D — Pupillary distance. Decentration is found by comparing the frame PD with the patient's pupillary distance. PD determines where each optical center must be placed.

11. C — +2.00 and –2.00 are opposite corrections. An unsigned power is ambiguous because +2.00 (a plus lens for hyperopia) and –2.00 (a minus lens for myopia) are opposite corrections. The sign must be verified, never assumed.

12. A — A seamless, gradual change in power with no segment line. A progressive lens provides a continuous power gradient from distance to near with no visible line. The trade-off is soft peripheral distortion.

13. B — The extra plus power for near vision. The add is the additional plus power supplementing the distance prescription for close work. It is always a plus value.

14. D — Shifts the image so the eyes can fuse it. A prism repositions the perceived image (toward its apex) so the misaligned eyes can fuse it, relieving double vision. This is why prism corrects muscle imbalance.

15. C — Rewrites the same lens in the other cylinder form. Transposition expresses the identical lens in the other cylinder form without changing the actual correction. It combines the sphere with the cylinder, flips the cylinder sign, and rotates the axis 90°.

16. C — Improve accuracy when the face is asymmetric. Monocular PDs measure each eye separately from the bridge center, improving accuracy when the face is asymmetric. This ensures each optical center aligns with its own pupil.

17. A — Reduces glare and reflections, improving clarity. An anti-reflective coating cuts surface reflections and glare, improving night-driving clarity. It does not darken the lens or correct the prescription.

18. A — Plus lenses magnify the apparent image. A plus lens magnifies, making a strong-plus wearer's eyes appear enlarged. Minus lenses, by contrast, minify.

19. D — Lensmeter. The lensmeter verifies the power of finished lenses against the order. The lens clock, pupillometer, and distometer measure curvature, PD, and vertex distance instead.

20. A — Back surface, nearest the eye. Spectacle power is specified as back vertex power, referenced to the surface nearest the eye, so the lens is read back-surface against the stop. This is the verification standard.

21. B — Blocks horizontal glare reflected off water and roads. A polarized lens blocks horizontally oriented reflected glare, which a plain dark lens does not. This makes it ideal for driving and outdoor glare.

22. D — Dilate the pupil while admitting UV light. A dark non-UV lens dilates the pupil due to reduced brightness while letting UV reach the eye, which can be worse than no sunglasses. This is why UV protection must be confirmed separately.

23. A — Impact resistance and safety. Polycarbonate is chosen for a child mainly for its impact resistance and safety. Its thinness and cost are secondary considerations.

24. C — Lower Abbe value. High-index materials have lower Abbe values, producing more chromatic aberration and peripheral color fringing. This is the optical trade-off for thinner lenses.

25. C — Arm's-length distances like a monitor. The intermediate zone of a trifocal or progressive serves arm's-length distances such as a computer monitor. This is the gap a standard bifocal does not address.

26. A — Diverges light to move the focus back onto the retina. A minus lens diverges light, moving the myopic eye's focus from in front of the retina back onto it. This is the defining correction for myopia.

27. B — Cornea. The cornea provides the greatest share of the eye's refracting power (about two-thirds), more than the crystalline lens. Its clarity and curvature are critical to vision.

28. A — Presbyopia, the age-related loss of accommodation. Needing reading glasses in the mid-forties reflects presbyopia, the age-related stiffening of the crystalline lens that impairs near focus. It is corrected with a plus add.

29. A — Rods handle dim-light and peripheral vision; cones handle color and detail. Rods are responsible for dim-light and peripheral vision without color, while cones provide color and fine detail in bright light. This division explains the day/night difference.

30. B — Gradual, painless peripheral vision loss. Glaucoma characteristically causes painless, gradual peripheral vision loss from optic nerve damage. Its symptom-free progression is why screening matters.

31. C — A clouding of the crystalline lens. A cataract is an opacification of the crystalline lens, causing progressive blur, glare, and dimming. It is treated surgically with an intraocular lens implant.

32. B — Fluctuating, shifting vision. Diabetes can cause blood-sugar-related refractive shifts and fluctuating vision. Recognizing this pattern is a reason to encourage medical follow-up.

33. C — The central field, used for detailed vision. Macular degeneration damages the central retina, causing central vision loss while peripheral vision is preserved. This is the mirror image of glaucoma.

34. D — Crystalline lens changing shape to focus on near objects. Accommodation is the crystalline lens becoming more convex, via the ciliary muscle, to focus on near objects. Its age-related decline produces presbyopia.

35. C — Reduced vision in an eye not correctable by lenses alone. Amblyopia ("lazy eye") is reduced vision in an eye that did not develop normally and cannot be fully corrected by lens power alone. It differs from a turned eye (strabismus), which is a positional misalignment.

36. C — A forward protrusion associated with thyroid disease. Exophthalmos is a forward protrusion of the eyes most associated with thyroid disease. It can affect frame fit and lid closure.

37. D — Unequal curvature focusing light to two lines. Astigmatism results from unequal corneal (or lens) curvature, focusing light to two focal lines instead of a point. It is corrected with a cylinder at a specific axis.

38. D — Inward rotation of the eyes for near targets. Convergence is the inward rotation of the eyes to maintain single vision on a near target. Divergence is the opposite movement toward distance.

39. B — The distance a normal eye reads what they read at 20 feet. In the Snellen fraction, the bottom number is the distance at which a normal eye reads the line the patient reads at 20 feet. A larger denominator means worse acuity.

40. D — Closer to the eye, changing the effective power. A contact lens sits at essentially zero vertex distance, closer than spectacles, changing the effective power needed. This vertex effect is significant in strong prescriptions.

41. B — Impact resistance for safety. Polycarbonate is chosen for racquetball eyewear for its impact resistance and safety. Thinness, Abbe value, and cost are secondary.

42. C — Grooved to seat the nylon cord. A semi-rimless nylon-cord mounting requires a groove cut in the lens edge to seat the cord. Each mounting type dictates its own edge treatment.

43. D — Windshields block most of the activating UV. Most photochromics darken in response to UV, which a windshield largely blocks, so they darken less while driving. This is a key limitation to disclose.

44. D — Titanium or another hypoallergenic material. A nickel-allergic patient should be fitted with a hypoallergenic material such as titanium. Nickel-containing alloys risk provoking the reaction.

45. B — Reduces reflections and increases light to the eye. An anti-reflective coating reduces surface reflections and increases light transmission to the eye. It does not darken the lens or make it unbreakable.

46. D — Have a fixed optical-center spacing that may not match the PD. OTC readers have a fixed optical-center spacing, which can induce prism if it does not match the patient's PD, causing eyestrain. This is a key limitation of ready-made readers.

47. A — Polycarbonate or Trivex. Rimless drill-mount lenses are stressed at the holes, so impact-resistant polycarbonate or Trivex prevents cracking. Glass and brittle materials are inappropriate.

48. C — Darker at the top and lighter at the bottom. A gradient tint transitions from darker at the top to lighter at the bottom, unlike a uniform solid tint. This distinguishes it from a solid tint.

49. B — Spans the full width of the lens. The executive bifocal's near segment extends across the entire lens width, giving the widest near field. Its size also makes it heavier.

50. D — An electronic video magnifier. An electronic video (CCTV) magnifier is a recognized low vision aid that enlarges and enhances contrast for reading. Routine coatings and standard lenses are not low vision aids.

51. B — Magnification and contrast enhancement. Low vision aids work primarily through magnification and contrast/glare control to maximize remaining vision. They do not restore acuity or reverse disease.

52. D — Photochromic lens. A photochromic lens darkens outdoors in UV and lightens indoors, automatically adjusting its tint. This light-adaptive behavior is its defining feature.

53. C — Dilates the pupil while UV still reaches the eye. A dark non-UV lens dilates the pupil due to reduced brightness while letting UV reach the eye, which can be worse than no sunglasses. UV protection must be confirmed separately.

54. A — A metal frame with adjustable nose pads. Metal frames with adjustable nose pads allow the bridge fit to be fine-tuned after dispensing. Plastic frames have a largely fixed bridge.

55. D — An executive-style bifocal. The executive bifocal's full-width near segment gives the widest near field for sustained drafting work. Round segments and shallow progressives offer narrower zones.

56. D — Lightweight, strong, and hypoallergenic. Titanium is a premium frame material because it is lightweight, strong, corrosion resistant, and hypoallergenic. These properties suit patients with sensitivities.

57. C — UV protection is a separate property to confirm. UV protection must be confirmed as a specific lens property and is not guaranteed by tint darkness. A dark non-UV lens can be worse than no sunglasses.

58. C — An aspheric lens design. An aspheric lens is flatter and reduces magnification, making a high-plus wearer's eyes appear less enlarged. Steeper curves, larger blanks, and thicker centers worsen the effect.

59. B — A standard bevel. A full-rim frame requires a standard bevel cut into the lens edge to seat in the frame groove. Rimless uses drilled holes and semi-rimless uses a groove.

60. B — A thinner, more cosmetically acceptable lens. High-index material is recommended for a strong Rx in a small rimless frame primarily for a thinner, more cosmetic lens. The Abbe trade-off and reflection are accepted in exchange.

61. C — Working distances and daily tasks drive lens selection. A lifestyle assessment matters because the patient's daily working distances and tasks, more than the prescription alone, determine the right lens design. The same Rx can call for different products.

62. D — Lens clock. A lens clock measures a lens's surface curvature in diopters and is the primary tool for checking base curve. The other instruments measure PD, vertex distance, or lens size.

63. B — Distometer. The distometer measures the gap between the lens and the cornea (vertex distance). This is used for vertex compensation in higher-powered prescriptions.

64. B — Aligns to the light reflex on each cornea. A corneal reflex pupillometer measures PD accurately by aligning to the light reflex on each cornea. This precision determines correct optical-center placement.

65. A — The near reading minus the distance reading. The add power equals the near zone reading minus the distance zone reading, since the add is the additional near plus power. It is obtained by difference, not read directly.

66. C — Calibrated for one specific index. A lens clock is calibrated to one assumed index, so on a high-index lens it measures curvature faithfully but the power reading needs caution. The curvature itself is read accurately.

67. D — The target displaced from the reticle center. Prism is indicated when the lensmeter target is displaced from the reticle center, with the amount and direction giving its magnitude and base. A centered target indicates the optical center.

68. A — Warmed so they bend without cracking. Plastic (zyl) frames must be warmed before bending because cold plastic is brittle and can crack. The warmth lets the frame reshape and hold its new form.

69. A — Protect the frame finish from marring. Padded nylon-jaw pliers grip frame parts without scratching the finish. Metal jaws on cosmetic surfaces would mar the frame.

70. B — Circumference (lens) gauge. A circumference (lens) gauge measures a lens's size or perimeter, used in edging and sizing. It does not measure power, curvature, or vertex distance.

71. D — Adjusted cold at room temperature. Metal frames are generally adjusted cold, unlike plastic frames which must be warmed first. Knowing which to heat is a practical distinction.

72. B — Pad-adjusting pliers. Pad-adjusting pliers grip and angle the nose-pad arms to position the pads. Matching the plier to its task protects both the frame and the fit.

73. A — Back vertex power, the spectacle standard. Placing the lens back-surface in ensures the reading is back vertex power, the standard for specifying and verifying spectacle lenses. Reversing it introduces error in higher powers.

74. C — Optical center. A centered, undisplaced lensmeter target indicates the instrument is reading through the optical center, where no prism is present. Displacement would indicate prism.

75. B — PD, seg height, pantoscopic tilt, and vertex distance. A digital measurement system captures position-of-wear data — PD, seg height, pantoscopic tilt, and vertex distance. It does not capture the material's Abbe value or only the base curve.

76. A — Lens thickness and small linear dimensions. Calipers measure lens thickness and small linear dimensions in millimeters. They do not measure power, PD, or UV transmission.

77. A — Displays the readings electronically. An automatic lensmeter displays its readings electronically once the lens is positioned, reducing operator variability. It measures the same back vertex parameters as a manual instrument.

78. B — Form curves and bends in metal components. Round-nose pliers are used to form curves and bends in metal frame parts. Each plier shape serves a specific adjustment task.

79. C — Frame misalignment needing adjustment. A tilted lens and uneven seating point first to frame misalignment, which adjustment can correct. Verifying alignment comes before suspecting the prescription or material.

80. D — Lens clock. A lens clock measures a lens's surface curvature in diopters and is the primary tool for checking base curve. The other instruments measure vertex distance, PD, or lens size.

81. D — PD and optical-center placement. Headaches with correctly verified power suggest a centration error, so the optician checks PD and OC placement, which can induce prism. Centration is verified before blaming the prescription.

82. A — Base curve from the previous pair. A "swim" sensation with correctly verified power often signals a base-curve change from the patient's prior lenses. Matching the previous base curve helps a remake feel familiar.

83. D — Bridge/nose-pad fit and temples. A frame that slides down points to the fitting triangle's support points — the bridge/nose pads and temples. Restoring even three-point support resolves the slipping.

84. A — Expected adaptation to the design. Mild initial side blur in a first-time progressive wearer is normal adaptation to the design, not a defect. Recognizing adaptation prevents an unnecessary remake.

85. B — Lower eyelid margin. For most flat-top bifocal fits, the segment top is set at the lower eyelid margin so the patient sees over it for distance and into it for near. Setting it too high or low compromises vision.

86. D — Too low relative to the pupil. A progressive whose reading area sits too low usually reflects a fitting cross set too low relative to the pupil. Correct placement at the pupil center prevents this.

87. C — The lower edge of the lens sits closer to the face. Pantoscopic tilt is the vertical tilt in which the lens's lower edge sits closer to the face than the top. A modest tilt aligns the lens with the downward line of sight.

88. D — Optically compensated for the wrap angle. High-wrap sport frames can introduce peripheral distortion unless the lenses are optically compensated for the wrap. Thickness changes and blank size do not address the wrap optics.

89. B — Centration error inducing prism. Double vision in correctly powered glasses most likely reflects a centration error inducing unwanted prism. Coatings, tints, and warranties do not cause diplopia.

90. D — A dedicated intermediate zone. Clear distance and near but blurry arm's-length vision indicates a missing intermediate zone, supplied by a trifocal or progressive. A stronger add or larger frame does not address it.

91. A — Place the optical center before the pupil and avoid induced prism. Correct centration places the optical center in front of the pupil so no unwanted prism is induced in primary gaze. This is the core purpose of accurate centration.

92. C — Less effective plus power than intended. Increasing the vertex distance on a high-plus lens reduces its effective power at the eye, so the patient receives less plus than intended. This is why vertex matters in strong plus prescriptions.

93. B — The eyes gaze below the optical centers to read. Vertical imbalance arises in down-gaze because the eyes look below the optical centers by different amounts in anisometropia, inducing unequal prism. In primary gaze through the OCs no imbalance occurs.

94. B — Slab-off applied to one lens. Significant vertical imbalance from anisometropia is commonly corrected with a slab-off, which adds prism in the reading portion of one lens. This neutralizes the imbalance in down-gaze.

95. A — Reduces edge thickness when well centered. Beyond high-index material, a smaller, well-centered frame reduces edge thickness for a strong minus prescription. A large frame keeps edges thick.

96. C — Pupillary distance. PD determines where each lens's optical center must be placed to align with the pupil. Accurate PD prevents unwanted induced prism.

97. B — Vertical (B) measurement depth. A progressive needs adequate vertical (B) depth to fit its distance, intermediate, and near zones. A too-shallow frame cuts off the near area.

98. D — Verify the lenses against the prescription. The first troubleshooting step is to verify the lenses against the prescription on the lensmeter. Remaking, blaming the Rx, or changing the frame before verifying is premature.

99. C — An anti-reflective coating to reduce glare. Extensive night driving points toward an anti-reflective coating, which reduces glare and improves night clarity. A dark or mirrored lens would reduce useful light at night.

100. A — Too high relative to the lower lid. A bifocal segment that blocks distance vision was set too high relative to the lower-lid reference. Correct seg height places the top near the lower lid.

101. D — Within the allowed ANSI Z80 tolerance. A finished lens is acceptable when each parameter falls within its allowed ANSI Z80 tolerance, not when it matches every number exactly. "Within tolerance" is the practical standard.

102. A — FDA. The FDA requires that dress eyeglass lenses be impact resistant, regulating eyewear as a medical device. This is distinct from the ANSI Z87 occupational standard.

103. D — HIPAA. HIPAA protects the privacy and security of a patient's prescription and records. ANSI, FDA, and EPA rules govern products and the environment instead.

104. A — Not rated for occupational hazards. The duty to warn requires noting that ordinary dress lenses are not rated for occupational hazards like welding. Dispensing them silently would be a safety and liability failure.

105. A — ANSI Z87. Protective eyewear for a workshop must meet the ANSI Z87 occupational safety standard. ANSI Z80 covers dress lenses, not safety eyewear.

106. C — Entitled to a copy of their own prescription. Patients are generally entitled to a copy of their own prescription. Withholding it or limiting them to a verbal summary is improper.

107. B — A given axis error causes more blur with a strong cylinder. ANSI Z80 tightens axis tolerance as cylinder power increases because the same axis deviation produces more visual blur with a stronger cylinder. Weak cylinders are more forgiving.

108. B — Ophthalmic product tolerances. The ANSI Z80 series sets standards for ophthalmic product tolerances, against which lenses are verified. It does not govern pathogens, privacy, or waste.

109. C — Is not rated as occupational safety eyewear. A patient using fashion sunglasses for a hazardous task must be warned that the eyewear is not rated as occupational safety eyewear. This is a core duty-to-warn obligation.

110. A — As permitted by HIPAA or with the patient's consent. A patient's record may be released to a third party only as permitted under HIPAA or with the patient's consent. Arbitrary or public disclosure violates privacy rules.

111. D — UV protection is a separate property to confirm. A dark tint does not guarantee UV protection; UV blocking is a separate property that must be confirmed. A dark non-UV lens can be worse than no sunglasses.

112. A — Inform patients of product limitations and proper use. The duty to warn is the obligation to inform patients of the limitations and proper use of their eyewear. It does not guarantee material properties or eliminate standards.

113. C — ASTM. ASTM standards most directly govern sports and recreational protective eyewear, distinct from ANSI Z87 (occupational) and Z80 (dress). Matching the standard to the use is the testable skill.

114. A — The FDA sets the dress-lens impact rule; OSHA governs workplace safety. The FDA requires dress lenses to be impact resistant, while OSHA governs employee workplace safety — distinct roles. Confusing the two is a common error.

115. D — HIPAA privacy and security rules. An electronic medical record holding patient data must comply with HIPAA's privacy and security rules. ANSI and FDA standards govern products, not records.

116. C — EPA. The EPA most directly governs the disposal of chemical waste from an optical lab. HIPAA, the FDA, and ANSI address privacy and products instead.

117. C — ASTM-rated sports eyewear, with a warning about the limitation. Dress glasses are not sport-rated, so the optician recommends ASTM-rated sports eyewear and warns of the limitation. A tint or readers do not provide protection.

118. A — Safeguarded under HIPAA and released only as permitted. Protected health information is safeguarded under HIPAA and released only as permitted or with consent. It is not public, workplace-safety, or environmental data.

119. C — Falls within the allowed ANSI Z80 deviation. "Within tolerance" means each parameter falls within the allowed ANSI Z80 deviation, not that it matches every number exactly. This is the practical standard of acceptance.

120. B — Warn that they are not occupationally rated and recommend proper eyewear. The professional duty is to warn that ordinary glasses are not occupationally rated for arc welding and recommend proper eyewear. Dispensing silently or adding a tint does not provide protection.

121. A — The largest share of the eye's refracting power. The cornea provides the largest share of the eye's refracting power, about two-thirds. Its clarity and curvature are critical to focusing.

122. C — Controls the amount of light entering through the pupil. The iris is the colored muscular diaphragm that controls how much light enters through the pupil. It regulates retinal illumination.

123. D — A latent tendency controlled by fusion. A phoria is a latent misalignment held in check by the brain's fusion, unlike a constant manifest turn (tropia). This latent-versus-manifest distinction is the key difference.

124. D — Converts light into neural signals. The retina is the light-sensitive inner layer that converts light into neural signals sent via the optic nerve. It is where vision is transduced.

125. B — Keeps the cornea smooth, clear, and nourished. The tear film keeps the cornea smooth and optically clear, supplies oxygen and nutrients, and maintains comfort. A healthy tear film is essential for clear, comfortable vision.