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CALIFORNIA OPTICAL LICENSE SCHOOL
Fall Session, 1990
III

A 1. The index of refraction is lowest in:

a. air
b. polycarbonate
c. crown glass
d. flint glass

B 2. When parallel rays of light enter a prism, the light is deviated:

a. toward the apex
b. toward the base
c. through the apical angle
d. through the optical axis

C 3. One meter is equal to _____inches.

a. 19.37
b. 29.37
c. 39.37
d. 49.37

D 4. Two meters equal _____centimeters.

a. 50
b. 100
c. 150
d. 200

B 5. The index of refraction of any given transparent transparent material can be determined by:

a. dividing the speed of light in the material by speed of light in air.

b. dividing the speed of light in air by the speed of light in the material.

c. dividing the focal length in meters by the angle of deviation from the normal.

d. dividing the power in diopters by the focal length.

A 6. The speed of light in air is approximately:

a. 186,000 miles per second
b. 186,000 miles per minute
c. 186,000 miles per hour
d. 18,000 miles per hour

C 7. The direction of light is deviated in the course of passing from one transparent medium to another. This is known as:

a. diffraction
b. reflection
c. refraction
d. diffusion

C 8. Light travels through a certain transparent medium at the rate of approximately 109,412 miles per second. The index of refraction of that medium is:

a. 1.33
b. 1.490
c. 1.598
d. 1.70

186000 / 109412

B 9. The _____theory describes light as traveling through space in minute bursts of energy.

a. focal
b. wave
c. corpuscular
d. refractive

C 10. The focal length of a +1.00 diopter lens is:

a. +50 cm
b. -50 cm
c. +100 cm
d. -100 cm

A 11. A converging lens has a focal length of 2 meters. The power of this lens is:



a. +0.50 diopters
b. -0.50 diopters
c. +2.00 diopters
d. -2.00 diopters

2

C 12. Visible light is part of the overall spectrum of radiant energy. Although the range of wavelengths of visible light varies for many individuals, it generally accepted to lie between:

a. 100 and 1000 nanometers
b. 350 and 450 nanometers
c. 400 and 750 nanometers
d. 650 and 900 nanometers

D 13. A prism can deviate an image one centimeter at a distance of one meter. Its power is:

a. 4 prism diopters
b. 3 prism diopters
c. 2 prism diopters
d. 1 prism diopter

C 14. The distance from the crest of one wave to the crest of another is the:

a. amplitude
b. frequency
c. wavelength
d. deviation

A 15. The focal length of a -5.00 diopter lens is:

a. -20 cm
b. +20 cm
c. -2.0 m
d. +2.0 m

B 16. Decentering a plus lens upward will result in:

a. base down prism
b. base up prism
c. a change in focal length
d. decreased accommodation

B 17. Prentice's Rule states that the amount of induced prism is equal to:

a. power of the lens times the refractive index
b. power of the lens times the amplitude of accommmodation.
c. power of the lens times the decentration in meters.
d. power of the lens times the decentration in centimeters.

B 18. A pair of spectacles were ordered with a prescription of -2.00 D in each eye and a P.D. of 63. They were received from the laboratory with the optical centers set 66 mm apart. How much total prism was induced and in which direction is the base?

2.3 = 6

a. 0.6 prism diopters base out
b. 0.6 prism diopters base in
c. 1.2 prism diopters base out
d. 1.2 prism diopters base in

A 19. A pair of +4.00 spectacle lenses were ordered from the laboratory with a P.D. of 59 mm. When these lenses were verified, it was determined that the optical centers were positioned 4 mm too wide. How much prism was induced in each eye and in which direction is the base?

a. 1.6 prism diopters base out
b. 1.6 prism diopters base in
c. 0.8 prism diopters base in
d. 0.8 prism diopters base out

B 20. A diverging lens produces a _____ image.

a. real
b. virtual
c. oblique
d. magnified

B 21. Rays emanating from a point source of light are said to be:

a. converging
b. diverging
c. parallel
d. infinite

D 22. The optical center of a lens is:

a. At the geometrical center
b. On the 180 line
c. At the point where the "A" and "B" measurements meet.
d. A lens location of zero deviation of the optical axis.

C 23. The interpretation of the range of wavelengths of visible light varies for many individuals but is generally accepted as lying between:

a. 100 and 1000 nm
b. 300 and 400 nm
c. 390 and 750 nm
d. 500 and 800 nm

B 24. What is the approximate index of refraction of a diamond if the speed of light through the diamond is 77,000 miles per second?

77000 | 186000

770 | 1860 (2)
1542
318 0

a. 0.95
b. 2.42
c. 2.15
d. 1.86

B 25. If a plus sphere could bring parallel rays of light to a point of focus at a distance of 2 meters, it would have a power of:

$A = 2$

a. 2 diopters
b. 1/2 diopter
c. 3 diopters
d. 4 diopters

D 26. A plus five diopter lens decentered 2 mm creates_____ diopters of prism.

a. 0.10
b. 0.25
c. 2.50
d. 1.00

A 27. A myope always has in his or her prescription the following kind of power:

a. Minus power
b. Plus power
c. Cylinder power
d. Axis

B 28. A hyperope always has in his or her prescription the following kind of power:

a. Minus power
b. Plus power
c. Cylinder power
d. Axis

A 29. The PD written on the order is mistakenly noted as 70 mm when the actual measurement should be 66 mm. What unwanted prism would be found in the prescription if the distance prescription is OU -15.00 D sphere.

a. 3 prism diopters base in in each eye
b. 3 prism diopters base out in each eye
c. 2 prism diopters base in in each eye
d. 2 prism diopters base out in each eye

C 30. In a nearsighted eye incident parallel rays of light form an image_____.

a. on the retina
b. posterior to the retina
c. anterior to the retina
d. both anterior and posterior to the retina

B 31. An Rx with the OD minus and the OS plus is an obvious case of_____.

a. emmetropia
b. antimetropia
c. hetermetropia
d. isometropia

C 32. When light entering the eye, without corrective lenses, comes to a focus partially in front of the retina and partially in back of the retina, the patient's refractive error is_____.

a. myopia
b. hyperopia
c. mixed astigmatism
d. antimetropia

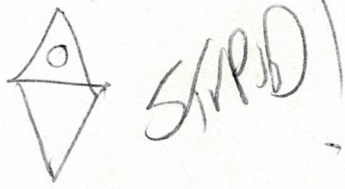
A 33. When light entering the eye without corrective lenses comes to a focus in front of the retina, the patient's refractive error is_____.

a. myopia
b. hyperopia
c. mixed astigmatism
d. antimetropia

K 34. The patient normally has no need for any visual correction for distant seeing but does require prescription lenses to see well at near point. This patient's refractive error is known as_____.

a. myopia
b. presbyopia
c. hyperopia
d. mixed astigmatism

B 35. A +3.00 diopter lens has the following prismatic effect 8 mm below the optical center:



a. 2.4 prism diopters base up
b. 2.4 prism diopters base down
c. 2.4 prism diopters base out
d. 2.4 prism diopters base in

B 36. A cataract is:

a. a film over the eye
b. a cloudiness of the crystalline lens
c. removal of the crystalline lens
d. an internal ptergium

READ THE QUESTION