

PART I ABS SAMPLE TEST ITEMS

1. A +7.00 D lens has a real object located 20 cm from the lens. What type of conjugate image is formed, and how far from the lens is it located?

<u>Image</u>	<u>Distance from the Lens</u>
a. Real	50 cm **
b. Virtual	50 cm
c. Real	8.30 cm
d. Virtual	8.30 cm
e. Real	14.30 cm

Classification: Optics (Geometrical): Ametropia

2. A lens is made of glass with a refractive index of 1.65. What would be the refractive index for the ideal anti-reflection coating?

- a. 1.28 **
- b. 1.34
- c. 1.41
- d. 1.49
- e. 1.65

Classification: Optics (Physical): Ametropia

3. An eye under the influence of an extremely strong miotic agent has a pupil diameter of 1 mm. Which factor limits the resolution of this eye?

- a. Radial astigmatism
- b. Coma
- c. Diffraction **
- d. Spherical aberration
- e. Depth of focus

Classification: Optics (Physiological): Ametropia

4. The Jackson crossed cylinder subjective test is begun with a -1.00 -1.75 x 090 lens in front of a patient's eye. If the correcting cylinder power is changed to -0.75 DC x 090, what should the spherical power now be?

- a. -2.00 DS
- b. -1.50 DS **
- c. -1.00 DS
- d. -0.50 DS
- e. +0.50 DS

Classification: Optics (Physiological): Ametropia



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5. A 53-year-old male reports occasional blur at distance and near. His visual acuities are 20/30 in each eye at distance and near with his present lens correction of +1.00 DS OD/OS, Add +1.75 D. Distance refraction for 20/20⁺ acuity is +1.50 DS OD/OS. What is the power of the BEST tentative Add for the new prescription?
- +1.25 D
 - +1.75 D **
 - +2.25 D
 - +2.50 D

Classification: Optics (Physiological): Ametropia

6. In patients with diabetes, a relative increase in which of the following refractive conditions is MOST associated with an increase in serum glucose levels?
- Hyperopia
 - Myopia **
 - Astigmatism
 - Anisometropia

Classification: Optics (Physiological): Ametropia

7. A patient's corneal topography map shows steepening of the vertical meridian in a "bow-tie" pattern. What does this finding indicate?
- With-the-rule astigmatism **
 - Against-the-rule astigmatism
 - Irregular astigmatism
 - A spherical cornea

Classification: Optics (Physiological): Ametropia

8. A lensometer can be used for determining which three of the following parameters? **(SELECT 3)**
- Front surface power
 - Back surface power
 - Equivalent power
 - Neutralizing power **
 - Prism power and base **
 - Base curve
 - Cylinder axis **

Classification: Optics (Ophthalmic): Ophthalmic Optics / Spectacles



9. Obliquely incident light passing through a spectacle lens contributes to which four of the following aberrations? **(SELECT 4)**
- a. Spherical aberration
 - b. Longitudinal chromatic aberration
 - c. Distortion **
 - d. Coma **
 - e. Radial astigmatism **
 - f. Curvature of field **

Classification: Optics (Ophthalmic): Ophthalmic Optics / Spectacles

10. Consider a patient with the following clinical data:

Spectacle prescription at the corneal plane: +7.00 -3.50 x 180
Keratometry findings: 41.50 D @ 180, 44.00 D @ 090

A diagnostic rigid gas permeable contact lens for the patient has the following characteristics:

Power: +2.00 DS
Base curve: 42.00 D (8.04 mm)

What is the expected over-refraction?

- a. +4.50 -1.00 x 180 **
- b. +4.50 -3.00 x 180
- c. +5.00 -1.50 x 180
- d. +5.50 -1.87 x 180

Classification: Optics (Physiological): Contact Lenses

11. A 71-year-old monocular patient with low vision has a distance correction of +3.00 DS. Through a single +5.50 DS lens in the trial frame, she can barely read 2M print at 40 cm. What is the SMALLEST print this patient is expected to barely read at a distance of 20 cm through a total lens power of +8.00 DS in the trial frame?
- a. 0.6M
 - b. 0.8M
 - c. 1.0M **
 - d. 2.0M
 - e. 4.0M

Classification: Optics (Physiological): Low Vision



12. A head tilt toward the left shoulder is MOST likely due to a paresis of the right:

- a. inferior oblique
- b. superior oblique **
- c. inferior rectus
- d. superior rectus

Classification: Optics (Physiological): Accommodation / Vergence / Oculomotor Function

13. An optometrist is performing the alternating cover test on a patient. Upon uncovering the right eye, the right eye moves down and out. Upon uncovering the left eye, the left eye moves up and out. Which deviation is present?

- a. Double hyper
- b. Eso, right hyper **
- c. Eso, right hypo
- d. Exo, right hyper
- e. Exo, right hypo

Classification: Optics (Physiological): Accommodation / Vergence / Oculomotor Function

14. The near point of accommodation (NPA) of a patient wearing a +1.25 D Add over his best distance correction is 19 cm. If the Add is removed, what would the NPA be?

- a. 15 cm
- b. 20 cm
- c. 25 cm **
- d. 30 cm

Classification: Optics (Physiological): Accommodation / Vergence / Oculomotor Function

15. As an emmetropic patient fixates an object at 33 cm, retinoscopic neutrality is observed at a distance of 67 cm. What do these findings suggest about the accommodative response?

- a. Lags behind the accommodative stimulus by 1.50 D **
- b. Lags behind the accommodative stimulus by 3.00 D
- c. Leads the accommodative stimulus by 1.50 D
- d. Leads the accommodative stimulus by 3.00 D

Classification: Optics (Physiological): Accommodation / Vergence / Oculomotor Function



16. A 21-year-old patient has a history of previously uncorrected simple hyperopic astigmatism of 3.00 D in each eye. Which of the following is MOST likely to be associated with the patient's refractive error?
- a. Eccentric fixation in one or both eyes
 - b. Meridional amblyopia in both eyes **
 - c. Monocular central suppression
 - d. Anomalous correspondence
 - e. Strabismus secondary to the uncorrected refractive error

Classification: Optics (Physiological): Amblyopia / Strabismus

17. A 65-year-old patient had a stroke and now manifests strabismus. What type of correspondence would this patient MOST likely exhibit?
- a. Unharmonious anomalous
 - b. Harmonious anomalous
 - c. Normal **

Classification: Optics (Physiological): Amblyopia / Strabismus

18. The portion of the spectrum called blue-green by patients with normal color vision is MOST readily confused with the white portion for which of the following types of observers?
- a. Trichromats
 - b. Deuteranopes **
 - c. Tritanopes

Classification: Optics (Physiological): Perceptual Function / Color Vision

19. Both a husband and wife pass standard color vision tests. If the wife's father has an inherited red-green color defect, what is the probability that the couple's daughter will have a color vision defect?
- a. 0.00 **
 - b. 0.25
 - c. 0.50
 - d. 1.00

Classification: Optics (Physiological): Perceptual Function / Color Vision



20. In a block of 100 trials of a yes/no signal detection experiment, the signal is absent on 10 trials. The observer has 80 hits and 5 false alarms. How many responses are correct rejections?
- a. 0
 - b. 5 **
 - c. 10
 - d. 15

Classification: Optics (Physiological): Perceptual Function / Color Vision

21. When measured with Teller acuity cards, what is the expected grating acuity of a 10-month-old infant?
- a. 10 cycles per degree **
 - b. 30 cycles per degree
 - c. 50 cycles per degree
 - d. 70 cycles per degree

Classification: Optics (Physiological): Visual and Human Development

22. When a patient over the age of 65 is driving toward a sunset, their vision is disturbed MOST by the normal aging changes in:
- a. tear film
 - b. pupil size
 - c. dark adaptation
 - d. the crystalline lens **

Classification: Optics (Physiological): Visual and Human Development

23. What is the MOST frequent etiology of a unilateral or bilateral proptosis in an adult?
- a. Idiopathic orbital inflammation
 - b. Cavernous hemangioma
 - c. Painful ophthalmoplegia
 - d. Graves disease **

Classification: Pathology: Lids / Lashes / Lacrimal System /Ocular Adnexa / Orbit



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24. A 21-year-old patient has an enlarging, elevated reddish-blue eyelid lesion of recent onset. Which of the following laboratory tests should be ordered as the next step in evaluating this patient?
- HIV ELISA **
 - C-reactive protein
 - Hemoglobin A1c
 - Alanine transaminase

Classification: Pathology: Lids / Lashes / Lacrimal System / Ocular Adnexa / Orbit

25. The sensation of corneal pain is PRIMARILY transmitted through which of the following nerves?
- Infraorbital
 - Lacrimal
 - Nasociliary **
 - Oculomotor

Classification: Anatomy (Gross): Conjunctiva / Cornea / Refractive Surgery

26. Which of the following preservatives is MOST likely to disrupt the corneal epithelium?
- Benzalkonium chloride **
 - Chlorobutanol
 - Sorbic acid
 - Chlorhexidine

Classification: Pharmacology: Conjunctiva / Cornea / Refractive Surgery

27. A 72-year-old patient manifests lenticular changes and an increase in myopia. Which of the following types of cataracts is MOST likely responsible for these clinical signs?
- Anterior cortical
 - Nuclear **
 - Cerulean
 - Posterior polar

Classification: Pathology: Lens / Cataract / IOL / Pre- and Post-operative Care



28. A 33-year-old female has iridocyclitis. Slit lamp examination findings include large, mutton-fat keratic precipitates. Which of the following clinical procedures will MOST likely confirm the diagnosis?
- a. Chest x-ray **
 - b. Upper GI series
 - c. Antinuclear antibody test
 - d. Urinalysis

Classification: Pathology: Episclera / Sclera / Anterior Uvea

29. Which of the following topically administered drugs may be contraindicated with the use of oral monoamine oxidase inhibitors?
- a. Timolol
 - b. Tropicamide
 - c. Proparacaine
 - d. Phenylephrine **

Classification: Pharmacology: Episclera / Sclera / Anterior Uvea

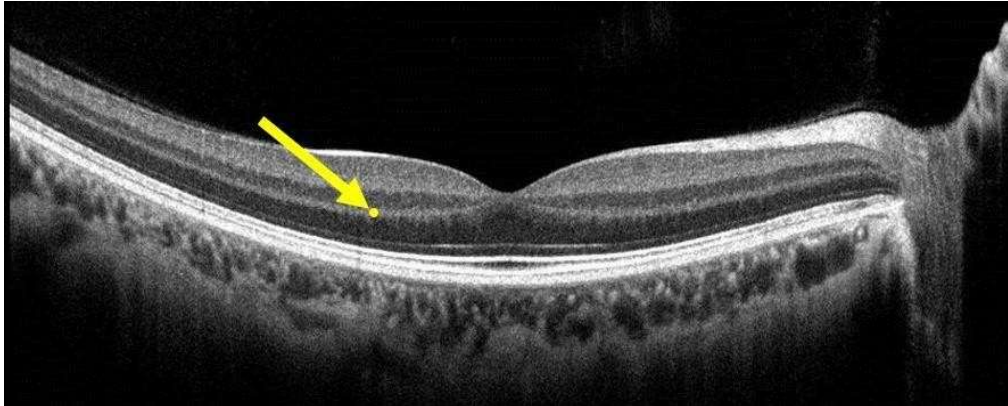
30. Occlusion of the central retinal artery will MOST likely cause necrosis of which of the following retinal layers?
- a. Inner nuclear
 - b. Ganglion cell **
 - c. Retinal pigmented epithelium
 - d. Outer nuclear

Classification: Anatomy (Gross): Vitreous / Retina / Choroid



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31. Consider the OCT image shown below and the yellow dot to which the arrow is pointing:

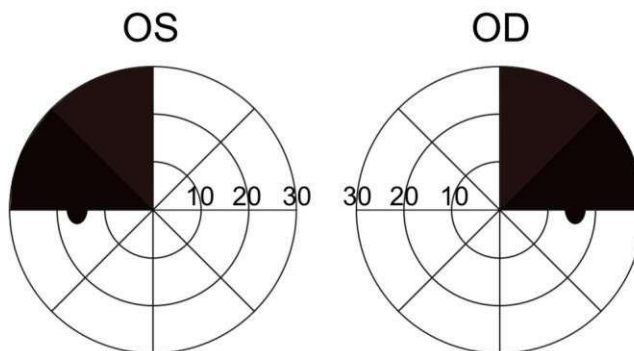


The yellow dot is located in which retinal layer?

- a. Inner plexiform
- b. Outer plexiform **
- c. Inner nuclear
- d. Outer nuclear

Classification: Anatomy (Gross): Vitreous / Retina / Choroid

32. Consider the visual field defect shown in the figure below:



Which of the following conditions is the MOST likely etiology of this visual field defect?

- a. Aneurysm of the basilar artery
- b. Left optic nerve glioma
- c. Right occipital lobe tumor
- d. Pituitary adenoma **

Classification: Pathology: Optic Nerve / Neuro-Ophthalmic Pathways



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33. An incongruous homonymous hemianopia that is most dense superiorly is usually indicative of a lesion in which cerebral lobe?
- Frontal
 - Temporal **
 - Parietal
 - Occipital

Classification: Pathology: Optic Nerve / Neuro-Ophthalmic Pathways

34. In a healthy eye, resistance to aqueous outflow is GREATEST in which structure?
- Juxtacanalicular tissue **
 - Canal of Schlemm
 - Uveal meshwork
 - Episcleral veins

Classification: Physiology: Glaucoma

35. When a clinician asks a patient to shrug his shoulders, which cranial nerve is being evaluated?
- Vagus
 - Glossopharyngeal
 - Spinal accessory **
 - Hypoglossal
 - Trigeminal

Classification: Anatomy (Neuroanatomy): Systemic Health

36. A 31-year-old female is deaf in her right ear and is unable to close her right eye but has no loss of touch sensation on the right side of her face. What is the MOST likely site of a single lesion that would account for her symptoms?
- Superior orbital fissure
 - Cavernous sinus
 - Internal auditory meatus **
 - Stylomastoid foramen
 - Crus cerebri

Classification: Anatomy (Neuroanatomy): Systemic Health



37. Which of the following changes in plasma ion concentration is the major stimulus for parathyroid hormone secretion?
- a. An increase in calcium
 - b. A decrease in calcium **
 - c. An increase in sodium
 - d. A decrease in potassium

Classification: Physiology: Systemic Health

38. Which of the following cell types is capable of becoming a plasma cell?
- a. Monocyte
 - b. Lymphocyte **
 - c. Eosinophil
 - d. Neutrophil

Classification: Immunology: Systemic Health

39. Which type of antibody is involved in atopic disease?
- a. IgA
 - b. IgE **
 - c. IgG
 - d. IgM

Classification: Immunology: Systemic Health

40. Which of the following tests would BEST differentiate staphylococci from streptococci?
- a. Catalase **
 - b. Oxidase
 - c. Gram stain
 - d. Giemsa stain

Classification: Microbiology: Systemic Health



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41. Which three of the following organisms are gram-negative? **(SELECT 3)**

- a. *Neisseria gonorrhoeae* **
- b. *Pseudomonas aeruginosa* **
- c. *Staphylococcus aureus*
- d. *Moraxella lacunata* **
- e. *Corynebacterium diphtheria*

Classification: Microbiology: Systemic Health

42. Tumors originating in which of the following organs typically do NOT metastasize?

- a. Lung
- b. Breast
- c. Colon
- d. Brain **

Classification: Pathology: Systemic Health

43. Ankylosing spondylitis INITIALLY leads to inflammation and functional change within which skeletal region?

- a. Cervical
- b. Thoracic
- c. Sacroiliac **
- d. Coccyx

Classification: Pathology: Systemic Health

44. Hematuria is MOST likely the result of which of the following conditions?

- a. Cystitis **
- b. Hepatitis
- c. Pancreatitis
- d. Hemosiderosis

Classification: Pathology: Systemic Health



45. Which of the following laboratory tests will yield abnormal results in a patient who has liver damage?
- Creatine phosphokinase
 - Blood urea nitrogen
 - Uric acid
 - Bilirubin **

Classification: Pathology: Systemic Health

46. Which two of the following drugs inhibit the synthesis of the bacterial cell wall? **(SELECT 2)**
- Doxycycline
 - Cephalexin **
 - Ciprofloxacin
 - Erythromycin
 - Amoxicillin **

Classification: Pharmacology: Systemic Health

47. When delivering an intramuscular injection into the deltoid muscle of an adult using a 5.0 cc syringe, which of the following gauge needles is MOST appropriate?
- 18 gauge
 - 23 gauge **
 - 27 gauge
 - 30 gauge

Classification: Pharmacology: Systemic Health

48. Which of the following drugs acts by selective stimulation of β_2 -adrenergic receptors?
- Theophylline
 - Isoproterenol
 - Norepinephrine
 - Albuterol **

Classification: Pharmacology: Systemic Health

