



243 N. Lindbergh Boulevard  
Suite 312  
St. Louis, Missouri 63141  
Phone: (314) 983-4244  
www.abopt.org

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## **American Board of Optometry Board Certification Examination DETAILED OUTLINE**

### **General Practice (160 items)**

*The core of the examination is based in the following ten areas of general practice.*

1. **Ametropia/Ophthalmic Optics (16%)**
  - a. Dispensing techniques
  - b. Lens designs (e.g., advantages and disadvantages of)
  - c. Materials (e.g., advantages and disadvantages of)
  - d. Assessment and differential diagnosis for refractive error
  - e. Treatment and management options for refractive error
  - f. Assessment and differential diagnosis for anisometropia
  - g. Treatment and management options for anisometropia
  - h. Assessment and differential diagnosis for refractive amblyopia
  - i. Treatment and management options for refractive amblyopia
2. **Pediatrics/Binocular Vision/Vision Therapy (8%)**
  - a. Assessment and differential diagnosis for visual perception disorders
  - b. Treatment and management options for visual perception disorders
  - c. Assessment and differential diagnosis for accommodative disorders
  - d. Treatment and management options for accommodative disorders
  - e. Assessment and differential diagnosis for binocular vision disorders
  - f. Treatment and management options for binocular vision disorders
  - g. Assessment and differential diagnosis for oculo-motor anomalies (e.g., saccades, pursuits, nystagmus)
  - h. Treatment and management options for oculo-motor anomalies (e.g., saccades, pursuits, nystagmus)
  - i. Assessment and differential diagnosis for non-refractive amblyopia
  - j. Treatment and management options for non-refractive amblyopia
3. **Contact Lenses (13%)**
  - a. Contact lens materials/design
  - b. Soft/gas permeable fitting techniques
  - c. Optics of contact lenses (e.g., power calculations and base curves)
  - d. Assessment and differential diagnosis for contact lens related complications
  - e. Treatment and management options for contact lens related complications
  - f. Indications and contraindications of corneal topography

4. Anterior Segment (15%)
  - a. Types of foreign bodies (e.g., superficial, penetrating)
  - b. Injurious chemical agents (e.g., alkali, acid, glue)
  - c. Assessment and differential diagnosis for episclera/sclera/uvea
  - d. Treatment and management options for episclera/sclera/uvea
  - e. Assessment and differential diagnosis for lacrimal system
  - f. Treatment and management options for lacrimal system
  - g. Assessment and differential diagnosis for diseases and disorders of lids and/or lashes
  - h. Treatment and management options for diseases and disorders of lids and/or lashes
  - i. Assessment and differential diagnosis for diseases and disorders of ocular adnexa
  - j. Treatment and management options for diseases and disorders of ocular adnexa
  - k. Assessment and differential diagnosis for diseases and disorders of orbit
  - l. Treatment and management options for diseases and disorders of orbit
  - m. Assessment and differential diagnosis for corneal diseases and disorders
  - n. Treatment and management options for corneal diseases and disorders
  - o. Assessment and differential diagnosis for conjunctival diseases and disorders
  - p. Treatment and management options for conjunctival diseases and disorders
  - q. Assessment and differential diagnosis for corneal ulcer
  - r. Treatment and management options for corneal ulcer
  - s. Assessment and differential diagnosis for chemical burns
  - t. Treatment and management options for chemical burns
  - u. Assessment and differential diagnosis for foreign body removal
  - v. Treatment and management options for foreign body removal
  - w. Assessment and differential diagnosis for ocular trauma (e.g., blowout fracture, blunt trauma, corneal assault)
  - x. Treatment and management options for ocular trauma (e.g., blowout fracture, blunt trauma, corneal assault)
  - y. Indications for anterior segment photos
  - z. Interpretation of anterior segment photos
  - aa. Indications for punctal plugs
  - ab. Interpretation of punctal plugs
  - ac. Indications and contraindications of oral medications
  - ad. Management of complications of oral medications
  - ae. Indications and contraindications of anti-allergy medications
  - af. Management of complications of anti-allergy medications
  - ag. Indications and contraindications of anti-inflammatory medications
  - ah. Management of complications of anti-inflammatory medications
  - ai. Indications and contraindications of antifungal medications
  - aj. Management of complications of antifungal medications
  - ak. Indications and contraindications of antiviral medications
  - al. Management of complications of antiviral medications
  - am. Indications and contraindications of antibiotic medications
  - an. Management of complications of antibiotic medications

5. Pre- and Post-operative care (7%)
  - a. Pre-operative evaluation for cataract or refractive surgery
  - b. Post-operative care for cataract or refractive surgery
  - c. Post-surgical complications of cataract or refractive surgery
  - d. Assessment and differential diagnosis for cataracts
  - e. Treatment and management options for cataracts
  
6. Posterior Segment (12%)
  - a. Assessment and differential diagnosis for macular diseases
  - b. Treatment and management options for macular diseases
  - c. Assessment and differential diagnosis for retinal vascular diseases (excluding CRAO)
  - d. Treatment and management options for retinal vascular diseases (excluding CRAO)
  - e. Assessment and differential diagnosis for diseases of the retina and/or choroid (e.g., histoplasmosis, nevus)
  - f. Treatment and management options for diseases of the retina and/or choroid (e.g., histoplasmosis, nevus)
  - g. Assessment and differential diagnosis for peripheral retinal diseases (e.g., break, detachment, RP, degenerations)
  - h. Treatment and management options for peripheral retinal diseases (e.g., break, detachment, RP, degenerations)
  - i. Assessment and differential diagnosis for central retinal artery occlusion
  - j. Treatment and management options for central retinal artery occlusion
  - k. Sudden vision loss
  - l. Indications for fundoscopy using auxiliary lenses (e.g., 90D, 3-mirror, Hruby)
  - m. Interpretation of fundoscopy using auxiliary lenses (e.g., 90D, 3-mirror, Hruby)
  - n. Indications for fundoscopy with binocular indirect ophthalmoscopy
  - o. Interpretation of fundoscopy with binocular indirect ophthalmoscopy
  - p. Indications for scleral depression
  - q. Indications for retinal imaging (e.g., OPTOS, OCT, retinal photography)
  - r. Interpretation of retinal imaging (e.g., OPTOS, OCT, retinal photography)
  
7. Optic Nerve/Glaucoma (12%)
  - a. Assessment and differential diagnosis for diseases of the optic nerve (excluding glaucoma and AION)
  - b. Treatment and management options for diseases of the optic nerve (excluding glaucoma and AION)
  - c. Assessment and differential diagnosis for glaucoma, glaucoma suspects, and ocular hypertension
  - d. Treatment and management options for glaucoma, glaucoma suspects, and ocular hypertension
  - e. Assessment and differential diagnosis for acute angle closure glaucoma attack
  - f. Treatment and management options for acute angle closure glaucoma attack
  - g. Assessment and differential diagnosis for arteritic anterior ischemic optic neuropathy

- h. Treatment and management options for arteritic anterior ischemic optic neuropathy
  - i. Indications for pachymetry
  - j. Interpretation of pachymetry
  - k. Indications for gonioscopy (e.g., 3 mirror lens, 4 mirror lens)
  - l. Interpretation of gonioscopy (e.g., 3 mirror lens, 4 mirror lens)
  - m. Indications for visual field testing for glaucoma (e.g., SAP, SWAP, FDT)
  - n. Interpretation of visual field testing for glaucoma (e.g., SAP, SWAP, FDT)
  - o. Indications for imaging techniques for glaucoma and optic nerve disease (e.g., GDx, HRT, OCT)
  - p. Interpretation of imaging techniques for glaucoma and optic nerve disease (e.g., GDx, HRT, OCT)
  - q. Indications and contraindications of glaucoma medications
  - r. Management of complications of glaucoma medications
8. Neuro-Ophthalmic Disorders (5%)
- a. Onset of diplopia
  - b. Assessment and differential diagnosis for visual pathway disorders (e.g., brain tumor, ocular tumor, infarction)
  - c. Treatment and management options for visual pathway disorders (e.g., brain tumor, ocular tumor, infarction)
  - d. Assessment and differential diagnosis for acquired brain injuries (e.g., diplopia, ocular pursuits, saccades, accommodative inability, binocular vision, glare sensitivity, inability to maintain visual contact)
  - e. Treatment and management options for acquired brain injuries (e.g., diplopia, ocular pursuits, saccades, accommodative inability, binocular vision, glare sensitivity, inability to maintain visual contact)
  - f. Assessment and differential diagnosis for neuro-ophthalmic and/or pupillary disorders (e.g., Bell's palsy, tonic pupil, EOM palsies)
  - g. Treatment and management options for neuro-ophthalmic and/or pupillary disorders (e.g., Bell's palsy, tonic pupil, EOM palsies)
  - h. Assessment and differential diagnosis for headaches including migraines
  - i. Treatment and management options for headaches including migraines
9. Vision Rehabilitation (5%)
- a. General principles of low vision and vision rehabilitation
  - b. Patient education
10. Systemic Health (7%)
- a. Common public health concerns (e.g., obesity, smoking)
  - b. Roles and responsibilities for other health care providers/specialists
  - c. Indications for blood pressure measurement
  - d. Interpretation of blood pressure measurement
  - e. Indications and contraindications of periorbital dermatological lesions
  - f. Management of complications of periorbital dermatological lesions

## **Areas of Emphasis (80 items)**

*In addition to the core examination, each candidate will select two of the following areas of emphasis, each of which will consist of an additional 40 items.*

### 1. Additional General Practice

(As above)

### 2. Contact Lenses

- a. Contact lens materials/design
- b. Soft/gas permeable fitting techniques
- c. Optics of contact lenses (e.g., power calculations and base curves)
- d. Assessment and differential diagnosis for anisometropia
- e. Treatment and management options for anisometropia
- f. Assessment and differential diagnosis for contact lens related complications
- g. Treatment and management options for contact lens related complications
- h. Assessment and differential diagnosis for episclera/sclera/uvea
- i. Treatment and management options for episclera/sclera/uvea
- j. Assessment and differential diagnosis for lacrimal system
- k. Treatment and management options for lacrimal system
- l. Assessment and differential diagnosis for corneal diseases and disorders
- m. Treatment and management options for corneal diseases and disorders
- n. Assessment and differential diagnosis for corneal ulcer
- o. Treatment and management options for corneal ulcer
- p. Indications for pachymetry
- q. Interpretation of pachymetry
- r. Indications and contraindications of corneal topography

### 3. Pediatrics/Binocular Vision/Vision Therapy

- a. Interviewing techniques
- b. Patient education
- c. Neuro-optometric rehabilitation methods (e.g., vision therapy for patients that suffered a stroke, brain tumor, trauma)
- d. Assessment and differential diagnosis for anisometropia
- e. Treatment and management options for anisometropia
- f. Assessment and differential diagnosis for refractive amblyopia
- g. Treatment and management options for non-refractive amblyopia
- h. Assessment and differential diagnosis for visual perception disorders
- i. Treatment and management options for visual perception disorders
- j. Assessment and differential diagnosis for accommodative disorders
- k. Treatment and management options for accommodative disorders
- l. Assessment and differential diagnosis for binocular vision disorders
- m. Treatment and management options for binocular vision disorders
- n. Assessment and differential diagnosis for oculo-motor anomalies (e.g., saccades, pursuits, nystagmus)

- o. Treatment and management options for oculo-motor anomalies (e.g., saccades, pursuits, nystagmus)
- p. Assessment and differential diagnosis for non-refractive amblyopia
- q. Treatment and management options non-refractive amblyopia
- r. Assessment and differential diagnosis for acquired brain injuries (e.g., diplopia, ocular pursuits, saccades, accommodative inability, binocular vision, glare sensitivity, inability to maintain visual contact)
- s. Treatment and management options for acquired brain injuries (e.g., diplopia, ocular pursuits, saccades, accommodative inability, binocular vision, glare sensitivity, inability to maintain visual contact)

#### 4. Ocular Disease Anterior

- a. Pre-operative evaluation for cataract or refractive surgery
- b. Post-operative evaluation for cataract or refractive surgery
- c. Post-surgical complications of cataract or refractive surgery
- d. Types of foreign bodies (e.g., superficial, penetrating)
- e. Injurious chemical agents (e.g., alkali, acid, glue)
- f. Assessment and differential diagnosis for contact lens related complications
- g. Treatment and management options for contact lens related complications
- h. Assessment and differential diagnosis for episclera/sclera/uvea
- i. Treatment and management options for episclera/sclera/uvea
- j. Assessment and differential diagnosis for lacrimal system
- k. Treatment and management options for lacrimal system
- l. Assessment and differential diagnosis for diseases and disorders of lids and/or lashes
- m. Treatment and management options for diseases and disorders of lids and/or lashes
- n. Assessment and differential diagnosis for diseases and disorders of ocular adnexa
- o. Treatment and management options for diseases and disorders of ocular adnexa
- p. Assessment and differential diagnosis for diseases and disorders of orbit
- q. Treatment and management options for diseases and disorders of orbit
- r. Assessment and differential diagnosis for corneal diseases and disorders
- s. Treatment and management options for corneal diseases and disorders
- t. Assessment and differential diagnosis for conjunctival diseases and disorders
- u. Treatment and management options for conjunctival diseases and disorders
- v. Assessment and differential diagnosis for cataracts
- w. Treatment and management options for cataracts
- x. Assessment and differential diagnosis for corneal ulcer
- y. Treatment and management options for corneal ulcer
- z. Assessment and differential diagnosis for chemical burns
- aa. Treatment and management options for chemical burns
- ab. Assessment and differential diagnosis for foreign body removal
- ac. Treatment and management options for foreign body removal

- ad. Assessment and differential diagnosis for ocular trauma (e.g., blowout fracture, blunt trauma, corneal assault)
  - ae. Treatment and management options for ocular trauma (e.g., blowout fracture, blunt trauma, corneal assault)
  - af. Assessment and differential diagnosis for acute angle closure glaucoma attack
  - ag. Treatment and management options for acute angle closure glaucoma attack
  - ah. Indications for pachymetry
  - ai. Interpretation of pachymetry
  - aj. Indications for gonioscopy (e.g., 3 mirror lens, 4 mirror lens)
  - ak. Interpretation of gonioscopy (e.g., 3 mirror lens, 4 mirror lens)
  - al. Indications for anterior segment photos
  - am. Interpretation of anterior segment photos
  - an. Indications for punctal plugs
  - ao. Indications for blood chemistry (e.g., CBC, ESR, A1c) for a differential diagnosis
  - ap. Interpretation of blood chemistry (e.g., CBC, ESR, A1c) for a differential diagnosis
  - aq. Indications and contraindications of corneal topography
  - ar. Indications and contraindications of corneal debridement
  - as. Management of complications of corneal debridement
  - at. Indications and contraindications of culture results
  - au. Indications and contraindications of periorbital dermatological lesions
  - av. Management of complications of periorbital dermatological lesions
  - aw. Indications and contraindications of oral medications
  - ax. Management of complications of oral medications
  - ay. Indications and contraindications of anti-allergy medications
  - az. Management of complications of anti-allergy medications
  - ba. Indications and contraindications of anti-inflammatory medications
  - bb. Management of complications of anti-inflammatory medications
  - bc. Indications and contraindications of antifungal medications
  - bd. Management of complications of antifungal medications
  - be. Indications and contraindications of antiviral medications
  - bf. Management of complications of antiviral medications
  - bg. Indications and contraindications of antibiotic medications
  - bh. Management of complications of antibiotic medications
5. Ocular Disease Posterior
- a. Post-surgical complications of cataract surgery
  - b. Sudden vision loss
  - c. Onset of diplopia
  - d. Assessment and differential diagnosis for diseases and disorders of orbit
  - e. Treatment and management options for diseases and disorders of orbit
  - f. Assessment and differential diagnosis for macular diseases
  - g. Treatment and management options for macular diseases
  - h. Assessment and differential diagnosis for retinal vascular diseases (excluding CRAO)

- i. Treatment and management options for retinal vascular diseases (excluding CRAO)
- j. Assessment and differential diagnosis for diseases of the retina and/or choroid (e.g., histoplasmosis, nevus)
- k. Treatment and management options for diseases of the retina and/or choroid (e.g., histoplasmosis, nevus)
- l. Assessment and differential diagnosis for peripheral retinal diseases (e.g., break, detachment, RP, degenerations)
- m. Treatment and management options for peripheral retinal diseases (e.g., break, detachment, RP, degenerations)
- n. Assessment and differential diagnosis for diseases of the optic nerve (excluding glaucoma and AION)
- o. Treatment and management options for diseases of the optic nerve (excluding glaucoma and AION)
- p. Assessment and differential diagnosis for glaucoma, glaucoma suspects, and ocular hypertension
- q. Treatment and management options for glaucoma, glaucoma suspects, and ocular hypertension
- r. Assessment and differential diagnosis for ocular trauma (e.g., blowout fracture, blunt trauma, corneal assault)
- s. Treatment and management options for ocular trauma (e.g., blowout fracture, blunt trauma, corneal assault)
- t. Assessment and differential diagnosis for acute angle closure glaucoma attack
- u. Treatment and management options for acute angle closure glaucoma attack
- v. Assessment and differential diagnosis for central retinal artery occlusion
- w. Treatment and management options for central retinal artery occlusion
- x. Assessment and differential diagnosis for arteritic anterior ischemic optic neuropathy
- y. Treatment and management options for arteritic anterior ischemic optic neuropathy
- z. Indications for pachymetry
  - aa. Interpretation of pachymetry
  - ab. Indications for gonioscopy (e.g., 3 mirror lens, 4 mirror lens)
  - ac. Interpretation of gonioscopy (e.g., 3 mirror lens, 4 mirror lens)
  - ad. Indications for fundoscopy using auxiliary lenses (e.g., 90D, 3-mirror, Hruby)
  - ae. Interpretation of fundoscopy using auxiliary lenses (e.g., 90D, 3-mirror, Hruby)
  - af. Indications for fundoscopy with binocular indirect ophthalmoscopy
  - ag. Interpretation of fundoscopy with binocular indirect ophthalmoscopy
  - ah. Indications for scleral depression
  - ai. Interpretation of scleral depression
  - aj. Indications for visual field testing for glaucoma (e.g., SAP, SWAP, FDT)
  - ak. Interpretation of visual field testing for glaucoma (e.g., SAP, SWAP, FDT)
  - al. Indications for imaging techniques for glaucoma and optic nerve disease (e.g., GDx, HRT, OCT)



- am. Interpretation of imaging techniques for glaucoma and optic nerve disease (e.g., GDx, HRT, OCT)
  - an. Indications for retinal imaging (e.g., OPTOS, OCT, retinal photography)
  - ao. Interpretation of retinal imaging (e.g., OPTOS, OCT, retinal photography)
  - ap. Indications for fluorescein angiography
  - aq. Interpretation of fluorescein angiography
  - ar. Indications for radiologic imaging (e.g., MRI, CT) for a differential diagnosis
  - as. Indications for blood chemistry (e.g., CBC, ESR, A1c) for a differential diagnosis
  - at. Interpretation of blood chemistry (e.g., CBC, ESR, A1c) for a differential diagnosis
  - au. Indications and contraindications of oral medications
  - av. Management of complications of oral medications
  - aw. Indications and contraindications of anti-inflammatory medications
  - ax. Management of complications of anti-inflammatory medications
  - ay. Indications and contraindications of antiviral medications
  - az. Management of complications of antiviral medications
  - ba. Indications and contraindications of antibiotic medications
  - bb. Management of complications of antibiotic medications
  - bc. Indications and contraindications of glaucoma medications
  - bd. Management of complications of glaucoma medications
6. Vision Rehabilitation/Low Vision/Neuro-Ophthalmic Rehabilitation
- a. Vision rehabilitation
  - b. Interviewing techniques
  - c. Patient education
  - d. Low vision testing techniques (e.g., Feinbloom, Bailey-Lovie)
  - e. Community support services (e.g., Commission for the Blind, Vocational Rehab)
  - f. Low vision devices (e.g., magnification, telescopes)
  - g. Principles of magnification
  - h. Neuro-optometric rehabilitation methods (e.g., vision therapy for patients that suffered a stroke, brain tumor, trauma)
  - i. Sudden vision loss
  - j. Onset of diplopia
  - k. Assessment and differential diagnosis for visual perception disorders
  - l. Treatment and management options for visual perception disorders
  - m. Assessment and differential diagnosis for oculo-motor anomalies (e.g., saccades, pursuits, nystagmus)
  - n. Treatment and management options for oculo-motor anomalies (e.g., saccades, pursuits, nystagmus)
  - o. Assessment and differential diagnosis for diseases and disorders of orbit
  - p. Treatment and management options for diseases and disorders of orbit
  - q. Assessment and differential diagnosis for diseases of the optic nerve (excluding glaucoma and AION)
  - r. Treatment and management options for diseases of the optic nerve (excluding glaucoma and AION)

- s. Assessment and differential diagnosis for visual pathway disorders (e.g., brain tumor, ocular tumor, infarction)
- t. Treatment and management options for visual pathway disorders (e.g., brain tumor, ocular tumor, infarction)
- u. Assessment and differential diagnosis for acquired brain injuries (e.g., diplopia, ocular pursuits, saccades, accommodative inability, binocular vision, glare sensitivity, inability to maintain visual contact)
- v. Treatment and management options for acquired brain injuries (e.g., diplopia, ocular pursuits, saccades, accommodative inability, binocular vision, glare sensitivity, inability to maintain visual contact)
- w. Assessment and differential diagnosis for neuro-ophthalmic and/or pupillary disorders (e.g., Bell's palsy, tonic pupil, EOM palsies)
- x. Treatment and management options for neuro-ophthalmic and/or pupillary disorders (e.g., Bell's palsy, tonic pupil, EOM palsies)
- y. Indications for retinal imaging (e.g., OPTOS, OCT, retinal photography)
- z. Interpretation of retinal imaging (e.g., OPTOS, OCT, retinal photography)
- aa. Indications for radiologic imaging (e.g., MRI, CT) for a differential diagnosis
- ab. Interpretation of radiologic imaging (e.g., MRI, CT) for a differential diagnosis

The computer based examination will be administered at Prometric Test Centers worldwide.