**Eye Banker Certification Examination**
Exam Resource Document & Study Guide

## Exam Overview and Test-Taking Information

### Exam Overview

EBAA offers the opportunity to attain certification as a Certified Eye Banker (CEB) or Certified Eye Banker (CEB)-Technical (CEBT) through a certification exam administered by Professional Testing Corporation at Prometric Test Centers. The exam is given twice a year, once in the Spring and once in the Fall.

### Exam Details

**Exam Format:** Electronic exam facilitated by Prometric. The exam can be taken at a Prometric Test Center or at a private location of choice with a remote Prometric proctor.
**Question Format:** 250 multiple-choice questions
**5 Areas of Testing:**

- Anatomy and Physiology (12%)
- Quality Assurance and Control (24%)
- Donor-Related Issues (20%)
- Technical Procedures (24%)
- Tissue-Related Procedure (20%)

**Passing Score:** A candidate must receive a score of 187 (75%) to pass the exam.
Time Limit: 4 hours

### Application Process

The application process for the CEBT Exam includes:

- Complete the application on the EBAA website and submit payment:
    - **Certified Eye Banker – Technical (CEBT)**
        - Visit the CEBT Application Page in the Members Portal.
        - CEBT candidates must demonstrate technical proficiency in eye banking by performing one of the approved technical procedures witnessed by a Technician Trainer and the eye bank Medical Director. A Practical Performance Competency Verification signed by the Technician Trainer and Medical Director must be completed before the application can be submitted. Please schedule the evaluations early, as the form must be uploaded with the application.
    - **Certified Eye Banker (CEB)**
        - Visit the CEB Application Page in the Members Portal.
- EBAA staff will process the application and the candidate will receive a confirmation email with additional steps if necessary. EBAA staff will contact you if there are any questions or missing components from your application.
- EBAA will provide the candidate's information to PTC.
- PTC will send directions for scheduling the exam.
    - If a candidate does not receive notification from Professional Testing Corporation (PTC) within four weeks after registering on their site, they should contact the EBAA Office to inquire as to the status of their application.

### Scheduling the Exam

Candidates will receive instructions from the PTC on how to schedule the exam. Candidates are encouraged to schedule the exam at their first opportunity and to not cancel the exam once it is scheduled.

**Test-Taking Rules and Guidelines**

**If taking the exam at a physical Prometric Test Center**

- Bring your current driver's license, passport, or state-issued ID with you to the test center. Expired or temporary documents will NOT be accepted. The name on the ID must match the name provided on your application.
- No food, beverages, watches, phones or electronic devices are allowed in the examination room. Lockers are provided for your personal items.
- Bulky clothing or jewelry are not allowed in the examination room.
- There are no breaks within the 4-hour period allotted for the exam.
- You will be scanned with a metal detector wand prior to every entry into the test room.
- You will be required to raise your pants legs above your ankles, empty and turn all pockets inside-out and raise shirt sleeves above your wrists prior to every entry into the test room.
- If you are wearing eyeglasses, you will be required to remove them for visual inspection to ensure they don't contain a recording device.
- Large jewelry items must be stored in your locker due to concerns over concealed recording devices.
- The Testing Center Administrator will inform you what is permitted during exam breaks. All candidates must inform the TCA before accessing a stored item during a break, including medicine.
- Candidates may use the restroom, but the timer on the exam continues while they are in the restroom. Candidates can leave the test room only for brief restroom breaks, but otherwise cannot leave the immediate test room area while their examination is in session. If you leave the test room, you will have to sign out and must go through security again when you return.
- Repeated or lengthy departures from the test room will be reported to the test sponsor.
- Candidates cannot bring paper and pencil or any materials to the test center.
- Light clothing items removed for comfort such as sweaters, suit jackets, scarves, etc., must be hung on the examinee's chair, not placed in laps or on the workstation desktop. Outerwear such as heavy coats, parkas, rain coats, etc., is not permitted in the test room.
- Talking to other candidates in the test room, referring to their screens, testing materials or written notes is strictly prohibited

**If taking the exam using live remote proctoring:**

- Be sure to read the ProProctor user guide and PTC FAQs **BEFORE** your appointment.
    - https://www.prometric.com/sites/default/files/2020-04/PrometricProUserGuide_3.1_1.pdf
    - https://ptcny.com/remote-proctor-faqs/
- Proctors will do a visual scan of your workspace. Use a laptop with a camera you can pick-up and move around your space.
- Remove everything from your desk, including phones, food, and beverages.
- You must have a working camera, working microphone, and a stable internet connection. **Your equipment and internet connection are your responsibility.** Take the readiness check prior to the appointment. Technical issues, such as power outages, internet connection, or equipment issues, can still occur and impact your examination even after passing the readiness check. If you have technical issues with your equipment or internet connection and cannot test or complete your examination, please refer to the transfer policy in the Handbook for Candidates.
- We recommend you do not use a work computer due to firewall settings.
- Ensure you have a quiet environment for testing with no one else in the room, including pets.
- If you do have an issue while testing, you must reach out to PTC no later than three days after your exam appointment. Please submit a support ticket on our website: www.ptcny.com/contact
- You MUST tell the proctor when you are getting up and leaving your working **space** - either for a scheduled break or to exit the exam. This must be done before clicking on the End Section button on the test software.

**Confidentiality of Exam Content/Systems**

- The computer-based test delivery system, tutorial, exam content, and survey are the unpublished, confidential, and proprietary materials of Prometric and/or EBAA.
- Communicating, publishing, reproducing, or transmitting any part of an exam, in any form or by any means (e.g. verbal, electronic, written, etc.) for any purpose is strictly prohibited.
- ANY reproduction or disclosure will result in the immediate filing of civil and/or criminal charges against you and anyone directing or conspiring with you.

**Exam Score Notification**

Candidates will receive scores 4-6 weeks after the exam cycle has closed. EBAA will receive the scores and will send out an email to each candidate immediately to notify them of their score and their passing status. A separate email will be sent to Executive Directors to inform them that their candidates have been notified, but information about the score and passing status will not be included. Candidates will receive their exam score breakdown from the Professional Testing Corporation in the weeks that follow. If a candidate passes, they will receive an email from EBAA with all of the information attached. Note: Certificates are no longer mailed as they can be downloaded on-demand in the Member Portal.

**Practice Exam**

The Professional Testing Corporation offers a practice exam. Individuals who take the exam will receive a score and a breakdown of the number of questions answered correctly in each of the 5 testing areas. Individuals will not receive information about which specific questions they answered incorrectly. The practice exam costs $35 and can be taken multiple times.

Details:

- Administered by the Professional Testing Corporation
- 75 multiple-choice questions
- 2 hours to complete test
- Questions taken from the CEBT exam question bank
- 5 Areas of Testing
    - Anatomy and Physiology (12%)
    - Quality Assurance and Control (24%)
    - Donor-Related Issues (20%)
    - Technical Procedures (24%)
    - Tissue-Related Procedure (20%)
- Website: https://ptcny.com/test-sponsors/ebaa/

Tips for taking the Practice Exam:

- Create an environment like that of the testing center.
    - Eat the same type of breakfast that you will have the day of the test
    - No food and drink during the test
    - Don't take breaks
    - Don't use references during the test
- Note how long it took you to take the exam
- Review areas where you missed the most questions.

# Study Guide

This document has been prepared and approved by members of the EBAA Exam Committee. It is intended to be used as a guide for candidates taking the **Eye Banker Certification Exam**. The information contained in this document follows the format of the current exam content outline and highlights resources that may be used to study for the exam.

## Study Resources

General study resources include the following:

- **EBAA Medical Standards**
  - The current edition is available at www.restoresight.org, located in the Members Section under Member Publications. Including appendices and glossary of terms
- **EBAA Technical Procedures Manual**
  - The current edition is available at www.restoresight.org, located in the Members Section under Member Publications. Including glossary of terms
- **Food and Drug Administration CFR 1271**
  - FDA Final Guidance for Industry: Current Good Tissue Practice (cGTP)
  - FDA Final Guidance for Industry: Eligibility Determination for Donors of HCT/Ps
- **eyeLEARN: EBAA's Learning Portal** (eyelearn.restoresight.org)
- **Introduction to Eye Banking, A Handbook and Atlas**, Rosenwasser and Nicholson.
- **Current and New Technologies in Cornea Donor Tissue Evaluation: Comparative Image Atlas,** Gray, Benetz, Stoeger, Lass.
- **Corneal Surgery and Technique,** Brightbill, McDonnell, McGhee, Farjo, Serdarevic.
- **Berry and Kohn's Operating Room Technique,** Phillips
- **Tabers Medical Dictionary**

## eyeLEARN

Visit eyelearn.restoresight.org for webinars, on-demand sessions, eye banking skills videos, surgical procedure videos, resources and more. Access the **Introduction to Eye Banking Course** for a collection of presentations, videos and resources on eye banking.

## Tips for Using the Document

- When an EBAA Medical Standard (MS) and/or Technical Procedure Manual (PM) section is referenced as '1.000', the entire section should be reviewed, as opposed to a specific sub-section.
- The MS and PM includes additional references for each section, which are good study resources.
- Use Tabers Medical Dictionary or an online resource to look up any unfamiliar words.
- Don't study from your eye bank's SOPs. Use original sources for practice such as FDA CFRs, EBAA Medical Standards, or any source that is referenced, i.e. Berry and Kohn's OR Technique.

## General Study and Preparation Tips

- Familiarize yourself with the EBAA Medical Standards, the EBAA Technical Procedures Manual and the relevant FDA Regulations.
- Know the difference between EBAA Medical Standards and FDA Regulations. Do not study your eye bank's SOPs.
- Be ready to apply your knowledge to scenario-based questions.
- Questions are written for individuals who have 6 months of experience working as an eye bank professional.
- Questions are designed to be straightforward and are not meant to trick candidates.
- Includes areas outside of your role at the eye bank, ask people in other departments about their roles and departments.
- Study Ocular Anatomy, this section seems to be the most difficult for candidates.
- Dedicate time to study for the exam.
- If taking the test in person, visit the testing center to make sure you know how to get there and how long it takes to get there.

Eat before the exam, you will not be able to take a break.

| Exam Outline | Study References |
|---|---|
| **I. Anatomy and Physiology (12%)** | 1. General Ophthalmology, Vaughn and Asbury, Lange Medical Publications, Los Altos, CA. Parts of the Eye, and Optics and Refraction<br>2. Ophthalmic Assistant: A Guide to Ophthalmic Medical Personnel, Stein, Stein and Slatt, Anatomy<br>3. Smolin and Thoft's The Cornea, Smolin, Gilbert and Thoft, Richard<br>4. Clinical Slit Lamp Biomicroscopy and Photo Slit Lamp Biomicrography, Martonyi, Bahn and Meyer, Time One Ink<br>5. Cornea Atlas, Krachmer and Palay. Elsiver Mosby: Normal Anatomy<br>6. Ocular Surface Disease: Medical and Surgical Management, Holland and Mannis. Springer Verlag, New York. Anatomy and Physiology of the Ocular Surface.<br>7. Internet searches, including images. |
| **A. Ocular**<br>i. General Characteristics<br>1. Anatomy of the Eye<br>2. Function<br>3. Conditions of the Eye<br>ii. Refractive Power of the Eye<br>1. Refractive Properties | Study the anatomy, structures and functions of the entire eye, not just the cornea.<br>Know contraindications and pre-operative diagnosis<br>Know the definition, understand how refraction works, and be able to identify the structures involved |
| 2. Refractive Errors | Myopia, Hyperopia, Presbyopia, Astigmatism |
| iii. Accommodation | Know the definition, structures involved and how it is affected by age. |
| iv. Other | |
| **B. Cornea**<br>i. General Characteristics<br>ii. Corneal Layers | Resource: Introduction to Eye Banking: An Atlas and Handbook<br>Understand the overall structure and function of the cornea, including knowledge of each layer and how they can be impacted during recovery and what can be observed during evaluation<br>Study function, relative location, thickness, etc. |
| 1. Epithelium<br>2. Bowmans Membrane<br>3. Stroma<br>4. Descemet Membrane<br>5. Endothelium<br>iii. Metabolic Functions<br>iv. State of Hydration<br>v. Factors Affecting Transparency<br>1. Rejection<br>2. Edema<br>3. Other | Examples include but are not limited to: Infiltrates, exposure, hydration, scars, arcus, edema |

| Exam Outline | Study References |
|---|---|
| **II. Quality Assurance and Control (24%)**<br>**A. Professional Standards** | |
| i. Accreditation | EBAA MS: B1.000<br>EBAA PM: B1.000<br>Constitution and Bylaws - Accreditation P&P |
| ii. Certification | EBAA MS: C2.000<br>EBAA PM: C2.000 |
| iii. Personnel | EBAA MS: C1.000<br>EBAA PM: C2.000 |
| iv. Reporting Requirements | EBAA MS: C1.400<br>EBAA PM: B1.000 |
| **B. Legislation and Regulatory Requirements**<br>i. FDA Registration<br>ii. FDA Donor Eligibility Rule<br>iii. FDA Current Good Tissue Practices<br>iv. FDA Guidance for Industry<br>v. CMS Conditions of Participation (CoP) | Study source documents, as applicable |
| **C. Facilities** | EBAA MS: C3.000<br>EBAA PM: C3.000 |
| i. Instrument Inspection, Cleaning and Handling | EBAA MS: C3.300<br>EBAA PM: C3.300<br>FDA 21 CFR 1271.210 |
| ii. Refrigeration and Temperature Recording | EBAA MS: C3.200<br>EBAA PM: C3.100; C3.200<br>FDA 21 CFR 1271.200, 1271.260 |
| iii. Sterilization Methods | EBAA MS: C3.300<br>EBAA PM: C3.300 |
| iv. Other | |
| **D. Infection Control and Personnel Safety** | EBAA MS: C3.600<br>Relevant OSHA |
| i. Aseptic Technique | Aseptic Technique - AAORN, Berry & Kohn's OR Technique |
| ii. Standard Precautions | EBAA MS: C3.600 |
| iii. Communicable Disease | EBAA MS: D1.000 |
| iv. Environmental Monitoring | |

| Exam Outline | Study References |
|---|---|
| **E. Quality Assurance** | EBAA MS: G1.000<br>EBAA PM: G1.000<br>FDA 21 CFR: 1271.150, 1271.160, 1271.180, 1271.320 |
| i. Auditing | EBAA PM Guidance Document: Implementation Guidance Document, Donor Risk Assessment Interview Forms<br>EBAA PM Guidance Document: Effective Quality Assurance of the Donor Risk Assessment Interview |
| ii. Microbiology | |
| 1. Organisms | Gram positive/negative bacteria - Wikipedia search<br>Common post-operative pathology, e.g. candida<br>Preservation media coverage |
| 2. Cultures<br>a. Requirements<br>b. Reporting<br>c. Environmental control | EBAA PM: C3.200, G1.210<br>EBAA MS G1.200 |
| iii. Record Keeping and Documentation | EBAA MS: C3.200, D1.300, L1.000, M1.000EBAA<br>PM: M1.050FDA 21 CFR: 1271.55, 1271.90, 1271.270 |
| iv. Adverse Reaction Reports | EBAA MS: G1.000, M1.400, M1.500<br>EBAA PM: M1.550<br>EBAA PM Guidance Document - Guidance Document for Investigating and Reporting Adverse Reactions to the EBAA<br>FDA 21 CFR 1271.350 |
| v. Recalls and Withdrawals | EBAA MS: E1.300, G1.300<br>EBAA PM: G1.300<br>FDA 21 CFR 1271.440 |
| vi. Other<br>**F. Other** | Post-operative requirements, etc. |

| Exam Outline | Study References |
|---|---|
| **III. Donor-Related Issues (20%)**<br>**A. Authorization**<br>i. Required Request Law (42 U.S.C.A. § 1320b–8)<br>ii. Uniform Anatomical Gift Act | www.uniformlaws.org |
| iii. Authorization Procedures and Documentation | EBAA MS: D1.400<br>EBAA PM: D1.300 |
| **B. Donor History, Screening, and Evaluation**<br>i. Donor Risk Assessment Interview (DRAI) | EBAA MS: Appendix III<br>EBAA PM Guidance Document: Implementation Guidance Document, Donor Risk Assessment Interview Forms<br>EBAA PM Guidance Document: Effective Quality Assurance of the Donor Risk Assessment Interview<br>FDA 21 CFR 1271.3, 1271.47, 1271.75 |
| ii. Serology Testing | |
| 1. Blood Sample Qualification | EBAA MS: D1.200, Appendix IV<br>FDA 21 CFR 1271.3, 1271.80, 1271.85 |
| 2. EBAA Required Tests | EBAA MS: D1.200, Appendix I, IV<br>EBAA PM: G1.200 |
| 3. FDA Required Tests | EBAA MS: D1.220<br>FDA 21 CFR 1271.3, 1271.80, 1271.85 |
| iii. Determination of Donor Eligibility for Transplant<br>1. EBAA Contraindications | EBAA MS: D1.100 |
| 2. FDA Contraindications | EBAA MS: D1.000, Appendix I, II, III<br>EBAA PM: Guidance Document: Effective Quality Assurance of the Donor Risk Assessment Interview<br>FDA 21 CFR 1271.50, 1271.75 |
| 3. Known Transmissible Disease<br>a. Rabies<br>b. Infection<br>c. Hepatitis B<br>d. Melanoma<br>e. Transmissible Spongiform Encephalopathies<br>f. Other | |

| Exam Outline | Study References |
|---|---|
| **IV. Technical Procedures (24%)** | |
| **A. Preparatory Procedures** | |
| i. Donor | |
| 1. Blood Drawing Procedures | EBAA PM: E1.140 |
| 2. Physical Inspection | EBAA MS: E1.100<br>EBAA PM: E1.110 |
| 3. Ocular Area Prep | EBAA MS: E1.100<br>EBAA PM: E1.110 |
| 4. Sterile Field Setup | EBAA PM: E1.110 |
| ii. Open-Container Processing | |
| 1. Laminar Flow Hood vs. 'Clean' Room | EBAA MS: E1.200<br>EBAA PM: E1.000, E1.200 |
| 2. Sterile Field Setup | EBAA PM: E1.200, E1.224 |
| **B. Whole Eye Enucleation** | |
| i. Equipment, Supplies, and Reagents | EBAA MS: E1.100, E1.210EBAA PM: E1.120 |
| ii. Procedure | EBAA MS: E1.210<br>EBAA PM: E1.120 |
| **C. Corneal Excisions** | |
| i. Equipment, Supplies, and Reagents | EBAA MS: E1.100, E1.300,<br>EBAA PM: E1.110, E1.130 |
| 1. Flow Hood Excision | EBAA MS: E1.200<br>EBAA PM: E1.221 |
| 2. In-situ Excision | EBAA MS: E1.100<br>EBAA PM: E1.130 |
| ii. Procedure | EBAA MS: E1.220, E1.221<br>EBAA PM: E1.130, E1.221 |
| 1. Flow Hood Excision | |
| 2. In-situ Excision | |
| **D. Scleral preservation** | |
| i. Equipment, Supplies, and Reagents | EBAA MS: E1.230<br>EBAA PM: E1.230 |
| ii. Procedure | EBAA MS: E1.230<br>EBAA PM: E1.231 |
| **E. Tissue processing** | |
| i. Equipment, Supplies, and Reagents | EBAA MS: E1.200, E1.222, E1.400<br>EBAA PM: E1.222 |
| ii. Procedure | EBAA MS: E1.222, E1.223<br>EBAA PM: E1.000 |

| Exam Outline | Study References |
|---|---|
| **V. Tissue-related Procedures (20%)** | |
| **A. Tissue Evaluation and Determination of Suitability** | 1. Introduction to Eye Banking, A Handbook and Atlas, Rosenwasser and Nicholson<br>2. Current and New Technologies in Corneal Donor Tissue Evaluations: Comparative Image Atlas, Cornea 2018; S1- S36, 37<br>https://journals.lww.com/corneajrnl/toc/2018/06001 |
| i. Slit Lamp Biomicroscopy | EBAA MS: F1.100, F1.300<br>EBAA PM: F1.100, F1.200 |
| 1. Procedure | |
| 2. Surgical Suitability | |
| ii. Specular Microscopy | EBAA MS: F1.200<br>EBAA PM: F1.300 |
| 1. Procedure | |
| 2. Suitability | |
| iii. Other | |
| **B. Surgical procedures** | |
| i. Penetrating Keratoplasty | 1. YouTube is a great resource for surgical videos. Search for the surgical procedure preceded by 'cornea' |
| ii. Lamellar Keratoplasty | 2. Understand the relationship between tissue surgical suitability and pre-operative diagnoses |
| 1. Anterior | 3. Frederick Brightbill's Corneal Surgery and Technique |
| 2. Posterior | |
| iii. Patch Graft | |
| iv. Refractive Keratoplasty | |
| v. Trabeculectomy | |
| vi. Sclera Use | |
| vii. Keratolimbal Allograft | |
| viii. Other | |
| **C. Storage and Distribution of Tissue** | |
| i. Storage | EBAA MS: I1.000<br>EBAA PM: I1.000<br>FDA CFR 1271.260 |
| ii. Labeling | EBAA MS: J1.000<br>EBAA PM: J1.000<br>EBAA PM Guidance Document: Implementation Guide, Use of ISBT128 in North American Eye Banks<br>ISBT 128 ICCBBA ST-002<br>FDA 21 CFR 1271.250, 1271.370 |
| 1. ISBT 128 | EBAA PM Guidance Document: Implementation Guide, Use of ISBT 128 in North American Eye Banks<br>ISBT 128 ICCBBA ST-002 |
| iii. Packaging | EBAA MS: L2.000<br>EBAA PM: L2.000<br>FDA 21 CFR 1271.265 |

| Exam Outline | Study References |
|---|---|
| iv. Accompanying Documentation Requirements | EBAA MS: L1.000<br>EBAA PM: L1.000<br>FDA 21 CFR 1271.55, 1271.370 |
| v. Distribution of Tissue | EBAA MS: K1.000<br>EBAA PM: K1.000<br>FDA CFR 1271.265 |
| vi. Other | |
| **D. Use of Tissue in Research and Education** | EBAA MS: H1.000<br>EBAA PM: H1.000<br>FDA CFR 1271.65 |