

**AMERICAN BOARD OF TISSUE BANKING  
AMERICAN ASSOCIATION OF TISSUE BANKS**

**Executive Summary of October 2017 Certification Examination**

*Leon J. Gross, Ph.D.  
Psychometric Consultant*

The American Board of Tissue Banking (ABTB) of the American Association of Tissue Banks (AATB) administered its annual examination for the certification of tissue bank specialists on October 7, 2017 in 29 exam sites within the following 4 countries: Australia, Canada, South Korea, and the United States. Administered in written format, the exam consisted of 130 multiple-choice items given in a single 3-hour session; 362 candidates sat for the exam.

The exam was constructed during a series of ABTB exam development virtual meetings with subject matter experts (SMEs) in medicine and tissue banking, accompanied by AATB staff and a consulting psychometrician. The exam was developed following standard operating procedures to conform to the Exam Content Outline. An abbreviated form of this document, displayed in Table 1, lists the major content areas (i.e., domains) and the range of items administered in each. The item range indicates the relative emphasis or importance of each domain based on a job analysis regarding the frequency with which the component knowledge is used, and its criticality regarding a satisfactory tissue bank outcome.

Although the exam extensively references *AATB Standards*, numerous items assess critical thinking (e.g., clinically contextual data interpretation and problem solving). Several of these items contain a clinical image such as a color photograph referencing anatomical structures and tissue recovery issues; other items reference other types of images such as proper labeling, or chart-related data. These items require candidates to *apply* knowledge in selecting the correct response. ABTB developed these items because they elevate the clinical applicability of the exam.

**Table 1: Exam Content Outline**

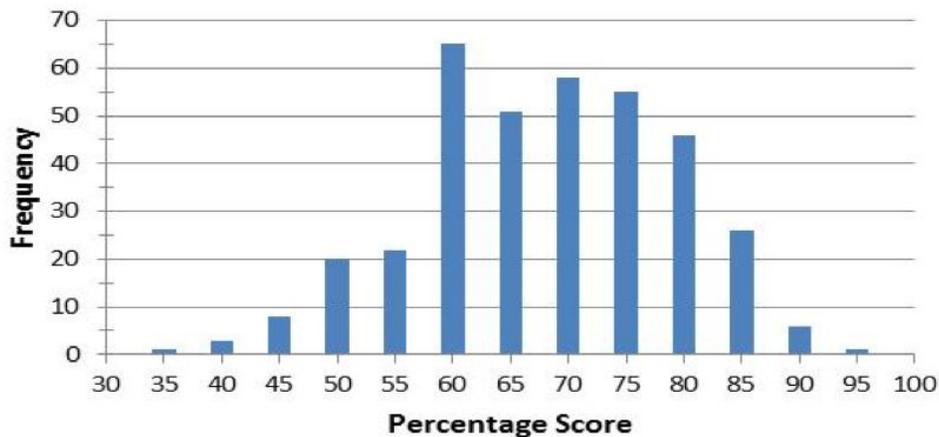
<i>Content Area</i>	<i>Range of Exam Items</i>
1. Distribution	11-15
2. Donor Screening	26-32
3. Processing	24-29
4. Quality Assurance	25-33
5. Recovery	30-35

All candidates are scored twice before any results are disseminated. The first scoring is to evaluate the quality of the items. This typically leads to changes in the exam key. The second scoring incorporates these changes, and is the iteration that produces the final candidate scores.

The exam summary statistics are displayed in Table 2, and the distribution of candidate scores displayed in Figure 1, are based on the final scoring that incorporated these changes. Table 3 displays the mean score for each of the five content areas.

Each candidate receives a score report in a similar format that indicates the number of items scored in each of the five content areas, and his or her corresponding percentage of correct responses. The next administration of the AATB certification exam is scheduled for October 2018.

**Figure 1: Histogram of Percentage Scores**



**Table 2: Examination Summary Statistics\***

<i>Descriptive Data</i>	<i>Raw Data</i>	<i>Percentage Data</i>
Score Range	40-115	32-93
Mean Score	82.0	66.1
Median	83	66.9
Standard Deviation	13.45	10.85
<i>Reliability Data</i>		
KR-20 Reliability	0.88	0.88
Kappa Reliability	0.69	0.69
Standard Error of Measurement of all scores	4.70	3.79
at the pass-fail cut score	4.90	3.95
<i>Pass-Fail Data</i>		
Pass-Fail Score	78	62.9
Candidates Passing	226	62.4
Candidates Failing	136	37.6

\* Statistics are based on 124 items, and 362 candidates.

**Table 3: Content Area Performance**

<i>Content Area</i>	<i>Number of Items Scored</i>	<i>Mean Score (%)</i>
1. Distribution	12	56.6
2. Donor Screening	30	70.3
3. Processing	23	68.0
4. Quality Assurance	30	63.6
5. Recovery	29	67.0