

Department of Anesthesia
Biomedical Sciences Exam Analysis Report
Exam Committee, May 2024

Detailed Exam Analysis Report

1. Physiology Exam Analysis

Overall Performance:

- Average Grade: 69.27%
- Median Grade: 68.75%
- Standard Deviation: 9.91%
- Reliability Score: -7.22% (Low, suggesting inconsistency)

Difficulty Index:

- Easy Questions (Above 80% correct rate): Q3, Q5, Q6, Q7, Q9, Q16
- Moderate Difficulty (50-80% correct rate): Q1, Q4, Q8, Q11, Q12, Q13
- Difficult Questions (Below 50% correct rate): Q2, Q10, Q14, Q15

Score Distribution:

- Slight negative skew (-0.0056), meaning more students scored slightly below the mean.
- Low kurtosis (-0.3652), suggesting scores are fairly spread out.

Consistency & Reliability:

- Low internal consistency (-7.22%), indicating issues with question quality.
- Some questions had negative discrimination indices, meaning high-performing students struggled more than low performers.

Red Flags:

- Several questions showed negative discrimination indices (Q1, Q2, Q3, Q8).
- Some questions were too easy, not effectively testing higher-level thinking.

Recommendations:

- Revise or remove low-discrimination questions to improve reliability.
- Ensure a balanced mix of easy, moderate, and hard questions.
- Improve question clarity to enhance fairness and accuracy.

2. Biochemistry Exam Analysis

Overall Performance:

- Average Grade: 5.38/11 (~49%)
- Scores ranged from 2/11 to 9/11, showing high variation.

Difficulty Index:

- Questions with very low scores suggest unclear or challenging wording.

Score Distribution:

- High variation in individual question performance, leading to student confusion.

Consistency & Reliability:

- Some students performed well while others struggled significantly, indicating question inconsistency.

Red Flags:

- Some questions might be ambiguous or misleading.
- Weighting of questions may not align with learning objectives.

Recommendations:

- Adjust the balance of question difficulty.
- Revise unclear questions and ensure alignment with curriculum.
- Provide more targeted feedback on commonly missed questions.

3. Pharmacology Exam Analysis

Overall Performance:

- Average Grade: 56.94%
- Median Grade: 58.33% (suggests normal score distribution).
- Standard Deviation: 13.83% (moderate variation).

Difficulty Index:

- Some questions were too difficult, lowering the overall reliability.

Score Distribution:

- Slight negative skew (-0.1165), indicating some students scored lower than expected.
- Low kurtosis (-0.0881), meaning scores were fairly spread.

Consistency & Reliability:

- Internal consistency at 59.90%, lower than the recommended 70%.
- Standard error of 8.76%, indicating potential scoring fluctuations.

Red Flags:

- Some questions may not be effectively measuring student ability.
- The reliability score is below 60%, indicating test inconsistencies.

Recommendations:

- Review and improve question clarity and difficulty balance.
- Ensure better alignment between questions and key learning outcomes.
- Improve test reliability by revising low-performing questions.