

# SUBJECT EXAMINATION PROGRAM

## BASIC SCIENCE EXAMINATION

### SCORE INTERPRETATION GUIDE



NBME® subject examinations provide medical schools with a tool for measuring examinees' understanding of the basic sciences. Items on this examination were written and reviewed by national test committees. Prior to publication, test forms are reviewed by a panel of course directors from this discipline. Although these examinations are designed to be broadly appropriate as part of overall examinee assessment, course objectives vary across schools, and the congruence between subject examination content and course objectives should be considered when interpreting test scores and determining grading standards. Specifically, subject examination scores should not be used alone, but rather in conjunction with other indicators of examinee performance in determination of grades.

#### Subject Examination Scores

The subject examination score is an equated percent correct score that represents mastery of the content domain assessed by the examination. It is calculated as the percentage of items in the total content domain that would be answered correctly based on an examinee's proficiency level. The subject examination scores are equated across test administrations and are statistically adjusted for variations in test form difficulty. Consequently, these scores can be used to compare and track school and examinee performance over time.

The subject examination scores are placed on a classic percent correct metric (0 – 100%) to facilitate interpretation and use. This scale can easily be incorporated into local assessments and grading schemes and provides a useful tool for comparing the scores of your examinees with those of a large, nationally representative group taking the examination as an end-of-course or end-of-year examination.

#### Precision of Scores

Measurement error is present on all tests, and the standard error of measurement (SEM) provides an index of the (im)precision of scores. The SEM indicates how far an examinee's score on the examination might stray from his/her "true" proficiency level across repeated testing using different sets of items covering the same content. Using the SEM, it is possible to calculate a score interval that will encompass about two thirds of the observed scores for a given true score by adding and subtracting the SEM from that score. For this examination, the SEM is approximately 4 points. If an examinee's true proficiency on the examination is 75, the score he/she achieved on the examination will usually (two times out of three) fall between 71 and 79 (75 - 4 and 75 + 4).

#### Score and Performance Feedback

Summary information on the examinee group tested, examination purpose and number of items scored is provided on each page of the feedback. The [Roster of Equated Percent Correct Scores](#) reports a total test equated percent correct score for each examinee. Reported scores also appear in a comma separated text file that can be downloaded. An [Examinee Performance Profile](#), which graphically displays content areas of strength and weakness, is provided for each examinee.

If there were at least 2 examinees, [Equated Percent Correct Score Descriptive Statistics](#) for reported scores are provided along with a [Frequency Distribution](#) of the total test equated percent correct score. If there were at least 5 examinees for a single form administration, a detailed [Content Area Item Analysis Report](#) summarizing the general content of each item on the exam along with group item performance is provided. Content area item descriptors and group item performance also appear in a file that can be downloaded. If there were at least 5 examinees for a single form administration or 10 examinees for a multiple form administration, a [Summary Content Area Item Analysis Report](#) is provided.

If there were at least 15 examinees, a [School Summary Performance Profile](#), which graphically displays areas of strength and weakness in each major content area for your specific test administration, is provided.

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## Norms

Total academic year norms are provided to aid in the interpretation of examinee performance. The norms reflect the performance of first-time taker examinees who took a form as an end-of-course or end-of-year examination. The two most recent sets of norms that have been developed for this examination are provided for your convenience and are reported on the equated percent correct score scale. Norms can also be found on NSP.

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YYYY-YYYY ACADEMIC YEAR NORMS



## Interpreting Academic Norms

- Norms are provided to aid in the interpretation of examinee performance.
- They make it possible to compare examinees' scores with the performance of a norm group.
- Norm group characteristics:
  - Examinees from LCME-accredited medical schools who took a form of this examination as an end-of-course or end-of-year examination for the first time during the academic years from mm/dd/yyyy through mm/dd/yyyy.

Academic Years	Number of Schools	Number of Examinees	Mean	SD
yyyy-yyyy	18	3,185	74.4	8.3

## Using the Table

- To use the table, locate an examinee's score in the column labeled "Equated Percent Correct Score" and note the entry in the adjacent column labeled "Percentile Ranks." This number indicates the percentage of examinees that scored at or below the examinee's equated percent correct score.

Equated Percent Correct Score	Percentile Ranks	Equated Percent Correct Score	Percentile Ranks
94 and above	100	67	20
93	100	66	16
92	100	65	14
91	99	64	11
90	99	63	9
89	98	62	8
88	97	61	7
87	96	60	6
86	94	59	5
85	92	58	3
84	90	57	3
83	88	56	2
82	84	55	2
81	81	54	2
80	76	53	1
79	71	52	1
78	67	51	1
77	62	50	1
76	58	49	0
75	54	48	0
74	48	47	0
73	42	46	0
72	37	45	0
71	33	44	0
70	29	43	0
69	27	42	0
68	24	41 and below	0