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# Exam Scoring Services

## Faculty Guide

The purpose of this booklet is to explain how you will be able to utilize machine scoring exam services provided by the Office of Testing and Evaluation (OTE).

This guide will explain the following:

- How to administer an exam for machine scoring
- How to prepare and submit exams for scoring
- Exam scoring features such as Learning Objectives (subtests), question point values/weighted scores, and multiple test forms/versions.
- Exam results options

The standard processing time for exams is 3 hours (under normal circumstances). Your exam will be scanned immediately upon receipt whenever it is possible. If your exam is not scanned while you wait, then the Office of Testing and Evaluation will contact you (via the method specified on the Exam Scoring Request Form) once your exam has been electronically scored.

Please review this guide or contact our office prior to selecting results reports options, as each report requires a good deal of time, system resources, and paper to produce. Please select only those reports that you intend to utilize.

As always, if you have any questions or need additional information about this or any of our other services, please contact us. Our regular business hours are Monday through Friday, 8:00 – 4:30.

The Office of Testing and Evaluation is located at Ninth Street Hall, Room 1302. Our phone number is 581-5986.

## Administering an Exam for Machine Scoring

Exams are scored by scanning forms with an OpScan<sup>®</sup> Scanner, and then processing scanned data in a program to create a results set. Effective Fall 2007 Semester, OTE began using Remark Classic OMR software to process exam data.

To have exams machine scored, you must have your students provide their answers on the scannable forms supplied by the Office of Testing and Evaluation.

There are three types of forms:

- Green (most commonly used): This form will accommodate up to 60 items (questions), and provides 5 response choices per item.
- Blue: This form will accommodate up to 200 items, with 5 response choices per item.
- Rust: This form will accommodate up to 150 items, with 10 response choices per item. *As this particular form is expensive, we ask that you please utilize it only if you have more than 5 response choices per item.*

Forms can be picked up at the main reception desk in the southwest corner of Ninth Street Hall (Student Success Center). Our staff will be happy to answer any questions you may have about the available forms.

To ensure accurate scoring, please provide the following instructions to your students:

- Use only a #2 pencil to mark responses.
- Blacken the response circles completely, and dark enough so that the letter inside the response choice cannot be seen.
- Erase carefully and completely.
- Make no stray marks.
- Do not fold or tear scannable (response) forms.
- Complete the last and first name grids, and **blacken the corresponding circles.**  
It is important to remember that the Social Security Grid will no longer be scanned. If two students have the same last name and first initial, then when using the T3 (green) form, it is recommended that students include their first name in the Last Name grid, in addition to their last name.
- If you are administering an exam with multiple forms/exam versions (to reduce the risk of cheating): **You will need to ensure that all examinees blacken the appropriate test form circle.** Scanned forms that do not have the appropriate circle blackened **will not be scored with the corresponding key.** You may administer exams using up to 5 versions of a test. Please bear in mind that when combining multiple test forms, you will not receive Item Analysis Reports or the Test Item Statistics Report.
- If you are administering an exam to multiple sections of the same course and wish for them to be scanned together and have a Comparative Grade Report produced: You may utilize the Special Codes grid to identify the section. However, **you will need to ensure that all students indicate the section in the Special Codes grid in a uniform manner, and blacken the corresponding circles.** Scanned forms that do not have the Special Codes grid completed properly will not be identified with the appropriate section.

For example, if you administer exams to sections 001 and 002 of a particular course, all students must blacken either "001" or "002" in the first three columns of the Special Codes grid. If a student merely blackens a "1" in the first column of

the grid, or blackens "001" in the last three columns, the program will not identify the correct section.

If you do not care for a Comparative Grade Report, do not care for Item Analysis Reporting, and wish for all sections' results to be combined, then there is no need to complete this step. Please see page 15 for more information regarding the Comparative Grade Report.

Once the exam has been administered, you will be ready to submit it for scoring.

## **Preparing and Submitting Exams for Machine Scoring**

Exams can be submitted for machine scoring to the Office of Testing and Evaluation either by you or a representative of your department.

The exam submission and collection desk is located at the main reception desk in the southwest corner of Ninth Street Hall (Student Success Center). For security reasons, exams will not be accepted via campus mail. Our regular business hours are Monday through Friday, 8:00 – 4:30 during the Fall and Spring Semesters. If you wish to submit an exam after hours, a mail slot is available at the exam submission location. During the week of finals, OTE will have expanded office hours, which will be posted in the University Newsletter prior to exams.

To prepare your exam for machine scoring, you will need to do three things:

1. Prepare Exam Forms for Scanning.
2. Prepare an answer key.
3. Complete an Exam Scoring Request Form.

### **Preparing Exam Forms for Scanning:**

Please stack scannable forms so that they are all facing in the same direction, and remove any blank forms. The scanning software will produce results reports in alphabetical order regardless of the order the exam forms are placed. The Office of Testing and Evaluation has envelopes available for your use if you do not have one. **If you are dropping exams in the after hours slot, it is imperative that scannable sheets be placed in a sealed manila envelope.**

#### **If you are using multiple exam forms:**

You may administer exams using up to 5 versions of a test. You will have two options for reporting when using multiple test forms:

- **Combined results:** Individual student response (scannable) sheets do not have to be sorted by test form. Place the test keys on the top of the stack of forms. You will need to ensure that all examinees blacken the appropriate test form circle. **Scanned forms that do not have the appropriate circle blackened will not be scored with the corresponding key.** Item Analysis and Test Item Statistics Report are not available with this option; however, the Comparative Grade Report is available.
- **Separated results:** Sort exams by test form, and either paperclip or rubber band each grouping with the corresponding answer key. The Comparative Grade Report is not available with this option; however, Item Analysis and Test Item Statistics Report are available.

## **Preparing Your Answer Key:**

An **answer key** is required for machine scoring of exams. If you are using the same exam for more than one section, you need only submit one key.

To complete an answer key, you will need to do the following:

- **Name Block:** Write the word “Key” in the first three boxes of the “Last Name” block, and blacken the corresponding circles.
- **Test Form Block:** If you are using more than one test form (i.e. two separate versions of the same exam to prevent cheating), you will need to prepare a separate key for each version of the exam. The test form block is used to indicate which test form the key is for, allowing up to 5 test forms. Blacken the appropriate test form (A, B, C, D, or E).
- **Answer Block:** Blacken the corresponding circle for the correct answer to each item/question dark enough that the letter inside the circle cannot be seen.
- **Course/Section/Instructor Free-form Block:** If you wish, you may write your name and the course and section in this block, so that the key is more easily identifiable.
- **Special Codes Grid:** If you are administering an exam to multiple sections of the same course and wish for them to be scanned together and have a Comparative Grade Report produced: You may utilize the Special Codes grid to identify the section. Please see the “Administering an Exam for Machine Scoring” section of this document (page 2) for more information about utilizing this feature.

## **Completing the Exam Scoring Request Form:**

An Exam Scoring Request Form is required upon submission. This form will provide our office with the information needed to provide optimum service to you. The form is available at the exam submission desk in Ninth Street Hall, and online at <http://www.eiu.edu/acatest/include/Transmittal%20Form.pdf>. If you are submitting an exam after hours, this form is also available at the after hours mail slot. A sample of this form is at the end of this booklet. The Exam Scoring Request Form is divided into the following sections:

**Instructor/Contact Information:** Please complete this section thoroughly so that OTE is aware of how you would like to be contacted once your exam has been scored, who will be able to pick up the results, and how to contact you if any questions arise. Please note that printed exam results cannot be sent to you via campus mail.

**Results Output Format:** There are 2 options for reporting format:

1. **Printed:** Results will be printed, and will be available for pick up at the Office of Academic Assessment & Testing. For security reasons, exam results cannot be sent to you via campus mail.
2. **Electronic:** Results will be uploaded as a pdf file to a secure website. You will be able to log on to this site using your EIU network id and password to collect and print your exam results. You must include an Exam Title on the Exam Scoring Request Form. Reports will not be printed at the Office of Testing and Evaluation, and cannot be sent to you via e-mail. You will be responsible for ensuring that scanned forms are collected from OTE.

**Exam Title:** You will be allowed up to 25 characters to be placed on the heading of each report you wish to receive. If you choose to receive reports in electronic format, this title is necessary when naming the folder used to store your electronic reports on the website. Many instructors choose to write the course and section number in this area. If you are submitting more than one section or test form and wish for them to be run separately with separate titles,

please write both titles in this area, and be certain that both keys and batches of scannable forms are **separated**, paper clipped, and **clearly labeled**.

**Available Reporting Options:** This will indicate to OTE which exam results options you wish to receive. There are three report sets available, or you may choose individual reports, or a set and plus individual reports in addition to the set. Please refer to the “*Interpreting Exam Results*” section of this booklet for a complete explanation of each individual report.

- **Standard Report Set:** This includes the Student Statistics Report (Alpha list), the Class Frequency Distribution Report, and the Condensed Item Analysis Report.
- **Student Report Set:** This includes the Student Statistics Report (Alpha list), the Class Frequency Distribution Report, and the Student Grade Report.
- **Statistical Report Set:** This includes the Student Statistics Report (Alpha list), the Class Frequency Distribution Report, the Detailed Item Analysis Report, the Test Statistics Report, and the Test Item Statistics Report.
- **Individual Reports:** If none of the report set options meet your reporting criteria, please select individual reports. Or, you may enhance report set options by selecting individual reports in addition to the report set you have chosen.
- **Comparative Grade Report (If exam has multiple test forms/versions):** Select this reporting option if you are **combining multiple test forms**, and **do not** wish to receive Item Analysis or Test Item Statistics Reports.

**If exam has multiple test forms/versions:** Please indicate if the test forms should be scanned together (all results reports will be combined, and the Comparative Grade Report will be available) or separately. Please bear in mind that when combining multiple test forms, you **will not** receive Item Analysis Reports or the Test Item Statistics Report.

**Exam utilizes Learning Objectives:** If you plan to utilize Learning Objectives/Subtests, it is important that this box be checked. ***You will then need to complete information specific to this option on Side 2 of the Exam Scoring Request Form.***

**Questions have Multiple Point Values:** If you plan to utilize Multiple Point Values/Weighted Scores, then it is important that this box be checked. ***You will then need to complete information specific to this option on Side 2 of the Exam Scoring Request Form.***

**Exam utilizes non-standard grade scale:** A “standard” grading scale is:

90% correct = “A”

80% correct = “B”

70% correct = “C”

60% correct = “D”

59% or less correct = “F”

If you wish to assign letter grades based on different percentages of the number of correct answers, then it is important that this box be checked. ***You will then need to complete information specific to this option on Side 2 of the Exam Scoring Request Form.***

**Special Instructions:** If you have any special instructions, write them in this section. If you are submitting exams for more than one section and wish to have them scanned together (all results will be combined), note that here. Otherwise, all sections will be scanned separately.

Side 2 of the Exam Scoring Request Form is required only if you have checked the boxes on side 1 indicating that you are utilizing Learning Objectives/Subtests and/or Multiple Point Values/Weighted Scores:

**Learning Objectives/Subtests:** Under the “Learning Objective Title” heading, write the name of the learning objective/subtest as you would like it to appear on your reports. Then, in the corresponding row, write the question numbers, separated by a comma, under the “Questions” heading. If you wish for any Learning Objective to have multiple point values/weighted scores, please complete the “Multiple Point Values” section below.

**Multiple Point Values/Weighted Scores:** You may assign point values to questions and/or entire learning objectives on your exam. Please write the question numbers (separated by a comma) or learning objective number (from the “Learning Objectives” table above) under the “Questions/Learning Objectives” heading, and the point value for them under the “Point Value” heading in the corresponding row. Any question or Learning Objective not specified in this section is assumed to be valued at 1 point each question.

**Grade Scale Values:** You may assign letter grades based on the percentage of items answered correctly. The default (or standard) letter grade designation is:

90% correct = “A”  
80% correct = “B”  
70% correct = “C”  
60% correct = “D”  
59% or less correct = “F”

If you wish to assign different letter grade designations, then write the minimum percentage correct next to each letter grade. This percentage must be a whole number. If you wish to indicate Pass/Fail only, then complete the last row of this section, indicating the **minimum passing percentage score**. Reports will not display both letter grades and Pass/Fail status. You may only choose to display one.

## **Interpreting Exam Results**

Once your exam has been scanned, you will receive either a printed set of results or an electronic copy that you will access via a secure website.

If your exam has more than one test form, or you are submitting exams for more than one section, you have the option to have your results scanned together or scanned separately. If scanned together, all reports will provide you with a series of combined results with no distinction between test forms or course sections. You will need to indicate whether you want combined or separate results on the Exam Scoring Request Form. In order to receive scores broken down by test form or section, you will either need to request the **Comparative Grade Report** on the Exam Scoring Request Form, or submit your test forms/course sections separately. See the “Preparing Exams for Scanning” section of this booklet (page 3) for more information.

If your exam contains Learning Objectives/Subtests, data for these will print on the various reports directly below the overall exam data.

The following pages will explain each type of print and electronic results options available.






# Interpreting Exam Results:

## Student Statistics Report

The Student Statistics Report provides the scores for all students in the class. If learning objectives are defined, separate tables will show the student information for the overall test and the learning objectives. An example of this report is at the bottom of this page. The following items are available on the Student Statistics Report:

- **Student:** Lists the student identified on the test in alphabetical order by last name. The contents of the first name field will also be listed. Each name appears exactly as it was blackened in on the scannable form. Students who fail to blacken their names or use pen will appear as blank lines at the top of the page.
- **Grade:** The student's letter grade on the exam, based on the following scale: A = 90 – 100%; B = 80 – 89%; C = 70 – 79%; D = 60 – 69%; F = 0 – 59%  
If you wish to change the scale, indicate this on the Exam Scoring Request form. For more information on changing grade scales, see the Completing the Exam Scoring Request form section of this document.
- **Total:** Displays the total score achieved by each student. The first number is the number of points the student received (number of questions answered correctly multiplied by their point value); the second number is the total number of possible points on the test.
- **Percent:** Displays the percent score achieved by each student (the number of correct points earned by each student divided by the total number of points the exam is worth).
- **Correct:** Displays the number of questions answered correctly (also known as “raw score”) for the student.
- **Incorrect:** Displays the number of incorrect questions for the student.
- **Missing:** Displays the number of missing (e.g., unanswered or invalid data) questions for the student. This would include any multiple marks (The number of items where more than one answer was blackened in by the student. This occurs most often when a student does not erase cleanly.).
- **Mean:** At the bottom of the table, a line will indicate the mean for the total number of points for the class, the mean percent, the mean for the number of correct responses, the mean for the number of incorrect responses, and the mean for missing/multiple responses.

### Student Statistics Report - DPT 1234567

Overall							
Student	Grade	Total	Percent	Correct	Incorrect	Missing	
HARRISON G	B	4.00 / 5.00	80.00		4	1	0
STARR R	D	3.00 / 5.00	60.00		3	1	1
LENNON J	F	1.00 / 5.00	20.00		1	4	0
MCCARTNEY J	B	4.00 / 5.00	80.00		4	1	0
<b>Mean</b>		3.00	60.00		3.00	1.75	0.25

## Interpreting Exam Results:


### **Class Frequency Distribution Report**

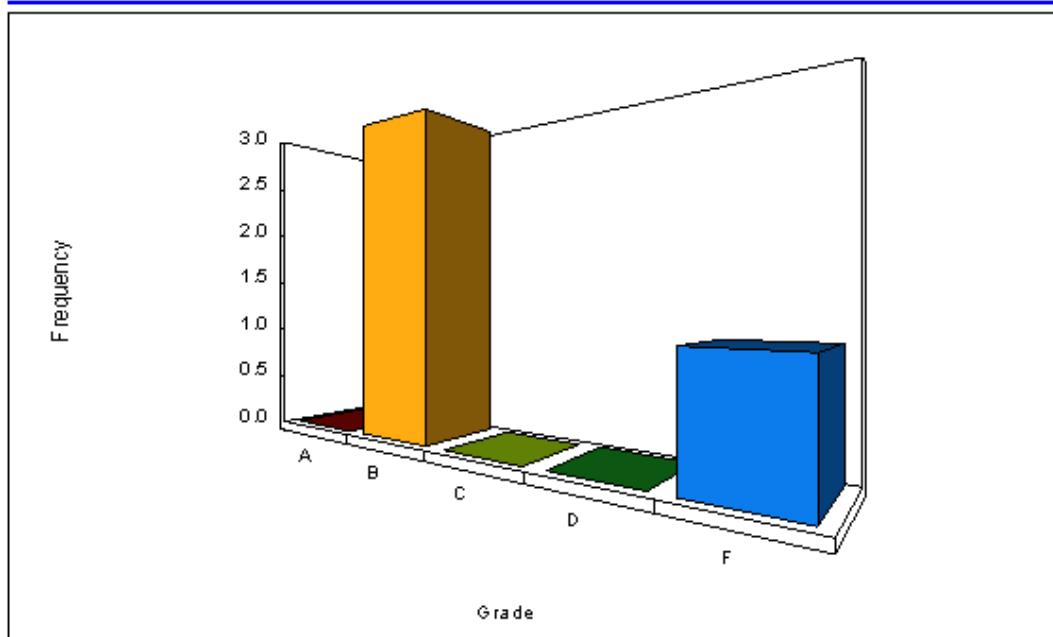
The Class Frequency Distribution Report displays the breakdown of scores for an entire class. It also shows the mean score at the top. If you have defined learning objectives, a breakdown of scores for each learning objective will also be displayed.

The table across the top of the report shows grades, percent score, raw score, and frequency of each grade. The chart shows the score across the X axis (bottom) and the frequency of that score along the Y axis (left side).

Letter grades displayed are based on the default grade scale, as indicated in the "Percent Score" column. If you wish to change the scale, indicate this on the Exam Scoring Request form. For more information on changing grade scales, see the Completing the Exam Scoring Request form section of this document.

### **Class Frequency Distribution Report**

<b>Overall</b>		Mean Score: 65.00%	
<b>Grade</b>	<b>Percent Score</b>	<b>Raw Score</b>	<b>Frequency</b>
A	90.00 - 100.00	4.50 - 5.00	0
B	80.00 - 89.99	4.00 - 4.49	3
C	70.00 - 79.99	3.50 - 3.99	0
D	60.00 - 69.99	3.00 - 3.49	0
F	0.00 - 59.99	0.00 - 2.99	1



# Interpreting Exam Results:

## Student Grade Report

The Student Grade Report provides a detailed grade report for each student who took the exam. Once printed, these reports may be given to your students. If you have chosen to receive reports electronically, each student report appears on its own page. If you have chosen to have reports printed at OTE, more than one student may appear on a page, and the page would need to be cut for distribution.

The Student Grade Report requires many system resources in order to be produced. **Please request this report only if you intend to utilize it.** If you have requested electronic data, bear in mind that this report will take a while to print.


At the top of each student's page is the student's name, along with a table providing the student's overall exam data:

- **Grade:** The student's letter grade on the exam, based on the following scale:  
A = 90 – 100%; B = 80 – 89%; C = 70 – 79%; D = 60 – 69%; F = 0 – 59%  
If you wish to change the scale, indicate this on the Exam Scoring Request form. For more information on changing grade scales, see the Completing the Exam Scoring Request form section of this document.
- **Total Score:** The number of questions the student answered correctly, multiplied by the point value for each correct item.
- **Score (%):** The corresponding percentage of the total score, accompanied by a bar that indicates the percentage value.

If learning objectives were defined, you will see scores for each learning objective (in addition to the overall test) in a table directly below the overall exam data.

A series of tables will appear on the report under the heading "Responses." **Only those items that were answered incorrectly or left blank will appear in this section.** To simplify viewing, the tables will contain up to three items each. Incorrect responses are highlighted. Each table lists the question number, along with the response the student blackened on the scannable form, and the correct answer.

If a student received a perfect score on an exam, then only the overall exam data will appear.

Student Grade Report					
Student: HARRISON G					
	Grade	Total Score	Score (%)		
Overall	B	400	80.00 		
Responses					
Question	Response	Correct Answer	Question	Response	Correct Answer
Questions4	E	D			

# Interpreting Exam Results:

## Test Statistics Report

The Test Statistics Report displays descriptive statistics about the overall test as well as each learning objective, if applicable. The following statistics are displayed:

### Score Data:

**Number of Graded Items:** The number of questions on the test key that were scanned.

**Total Points Possible:** Displays the total number of points on the test.

**Maximum Score:** Displays the highest score from the scanned tests.

**Minimum Score:** Displays the lowest score from the scanned tests.

### Statistics:

**Mean Score:** Displays the average score of all of the scanned tests.

**Mean Percent Score:** Displays the average percent score of all of the scanned tests.

**Range of Scores:** The range is the distance between the highest and lowest score.

**Standard Deviation:** A measure of the dispersion of a set of data from its mean. The more spread apart the data is, the higher the deviation. It is calculated by taking the square root of the variance.

**Variance:** The amount that each score deviates from the mean squared.

### Percentiles:

**Percentile (25 and 75):** Percentiles are values that divide a sample of data into one hundred groups containing (as far as possible) equal numbers of observations. For example, 25% of the data values lie below the 25th percentile.

**Median Score:** The median of the scores from the scanned tests.

**Inter Quartile Range:** The difference between the 75<sup>th</sup> percentile and the 25<sup>th</sup> percentile.

### Confidence Intervals:

**Confidence Interval (1, 5, 95 and 99%):** A confidence interval gives an estimated range of values that is likely to include an unknown population parameter, the estimated range being calculated from a given set of sample data. If independent samples are taken repeatedly from the same population, and a confidence interval calculated for each sample, then a percentage/confidence level of the intervals will include the unknown population parameter.

### Test Reliability:

**Kuder-Richardson Formula 20:** Measures test reliability and is an overall measure of internal consistency. A higher value indicates a stronger relationship between items on the test.

**Kuder-Richardson Formula 21:** Measures test reliability and is an overall measure of internal consistency. A higher value indicates a stronger relationship between items on the test.

**Coefficient (Cronbach) Alpha:** A coefficient that describes how well a group of items focuses on a single idea or construct.

Test Statistics Report		
Overall		
<b>Score Data</b>		
Number of Graded Items	5	
Total Points Possible	5	
Maximum Score	4	
Minimum Score	1	
<b>Statistics</b>		
Mean Score	3.25	
Mean Percent Score	65.00	
Benchmark Score	-	
Range of Scores	3.00	
Standard Deviation	1.50	
Variance	2.25	
<b>Percentiles</b>		
Percentile (25)	2.50	
Median Score	4.00	
Percentile (75)	4.00	
Inter Quartile Range	1.50	
<b>Confidence Intervals</b>		
1%	-1.13	
5%	0.86	
95%	5.64	
99%	7.63	
<b>Test Reliability</b>		
Kuder-Richardson Formula 20	0.80	
Kuder-Richardson Formula 21	0.62	
Coefficient (Cronbach) Alpha	0.53	

## Interpreting Exam Results:

### Item Analysis Options

Item Analysis is useful in providing data for each question on your exam, including how many students responded to each item alternative. Please bear in mind that when combining multiple test forms, you will not receive Item Analysis Reports.

There are 3 Item Analysis Reports:

- Detailed Item Analysis
- Condensed Item Analysis
- Item Analysis Graph Report

Each of the Item Analysis Reports contains statistical data for each question, presented in various formats. While each report is different in appearance, the data is calculated in the same manner, and the results would be identical in each report. **Please choose only those Item Analysis Reports that you intend to utilize.**

Each Item Analysis Report differs in the quantity of statistical data presented. The Detailed Item Analysis Report, for example, contains more data than the Item Analysis Graph Report. A description and example of each report and the statistical data provided on that report are provided at the end of this section.

The following statistics are available to varying degrees in the Item Analysis Reports:

- **Frequency:** Displays the number of times a particular answer choice was chosen by students for this particular question.
- **Percent:** Displays the corresponding percentage of the frequency (number of respondents who chose a particular answer choice to the question divided by total number of responses to this question).
- **Point Biserial:** A measurement of the discrimination of an item. It indicates the relationship between a response for a given item and the overall test score of the respondent. It is constrained to be between -1 and +1, with 0 being the midpoint. A high value indicates that students scoring well on the test chose this response.
- **Missing:** If there are missing values in your data set the total and corresponding percent will be displayed for each question.

# Interpreting Exam Results:

## Detailed Item Analysis Report

The Detailed Item Analysis Report provides an in-depth look at individual question statistics. Each question displays in a separate table. The question number is displayed at the top of each table. Answer choices (A, B, C, etc.) for each question are displayed in the first column (labeled "Response"). The correct answer (indicated on the key) is in bold and italic, and has an asterisk (\*) next to it. The total number of responses for each question is contained at the bottom of each table.

The following data appears in the table:

- Frequency
- Percent
- Point Biserial

### Detailed Item Analysis Report

Questions1

Response	Frequency	Percent	Point Biserial
<b>*A</b>	3	75.00	0.87
B	0	0.00	-
C	1	25.00	-0.87
D	0	0.00	-
E	0	0.00	-
<b>Total</b>	4	100.00	

Questions2

Response	Frequency	Percent	Point Biserial
A	2	50.00	0.50
<b>*B</b>	1	25.00	0.29
C	1	25.00	-0.87
D	0	0.00	-
E	0	0.00	-
<b>Total</b>	4	100.00	

## Condensed Item Analysis Report

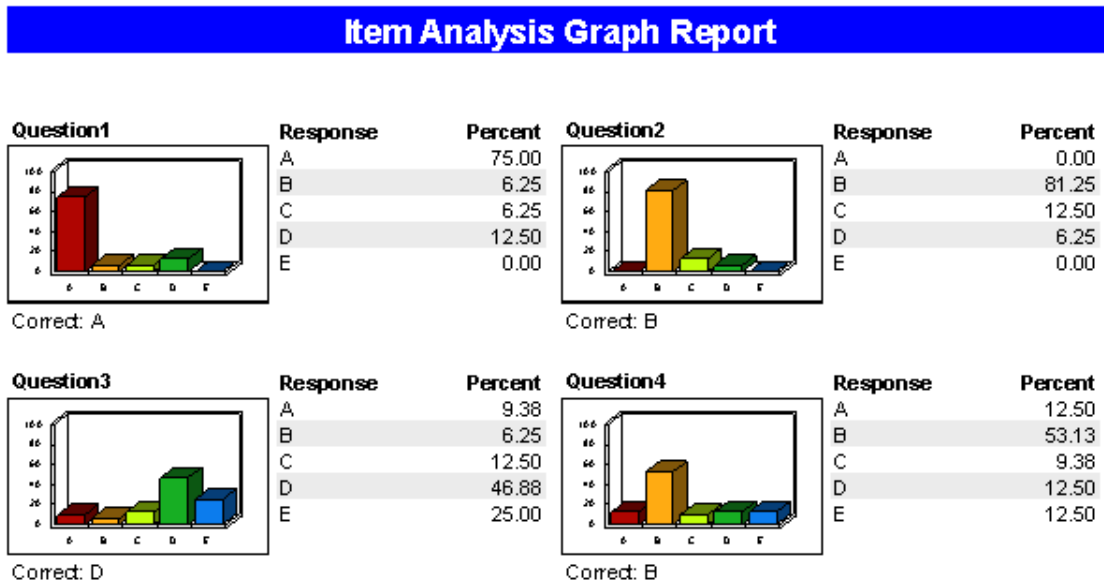
This report is similar to the Detailed Item Analysis Report but displays in a condensed format. The question number is displayed at the top of each table. Answer choices for each question are displayed in the "Response" column. The correct answer is in bold and italic, and has an asterisk (\*) next to it. A bar chart is display of the percent data is to the right of the table. The report contains the following data:

- Frequency
- Percent
- Missing

Condensed Item Analysis Report			
<b>Question 1</b>		<b>Question 2</b>	
Response	Frequency	Percent	
* <i>A</i>	2	50.00	
B	0	0.00	
C	1	25.00	
D	0	0.00	
E	0	0.00	
Missing	1	25.00	
<b>Question 3</b>		<b>Question 4</b>	
Response	Frequency	Percent	
A	0	0.00	
B	0	0.00	
* <i>C</i>	4	100.00	
D	0	0.00	
E	0	0.00	
Missing	0	0.00	
Response	Frequency	Percent	
A	0	0.00	
B	0	0.00	
C	1	25.00	
* <i>D</i>	2	50.00	
E	1	25.00	
Missing	0	0.00	

## Item Analysis Graph Report

The Item Analysis Graph Report contains graphs of frequency for each exam question and limited information pertaining to each graph. This report is a simplified version of the Detailed Item Analysis Report.



## Interpreting Exam Results:

### Test Item Statistics Report

The Test Item Statistics Report is similar to Item Analysis Reports in that it provides data for each item/question on your exam. Please bear in mind that when combining multiple test forms, you will not receive the Test Item Statistics Report.

This report displays the following descriptive statistics for each question on the test:

- **Question:** Displays the question number.
- **Points:** Displays the point value assigned to the question.
- **Graded:** Displays the number examinees who answered this question.
- **Correct:** Displays the number of students who answered the question correctly.
- **Incorrect:** Displays the number of students who answered the question incorrectly.
- **No Response:** Displays the number of students who left the question unanswered (blank).
- **P Value:** The probability of getting a value of the test statistic as extreme as or more extreme than that observed by chance alone, if the null hypothesis  $H_0$ , is true. It is the probability of wrongly rejecting the null hypothesis if it is in fact true.
- **Point Biserial:** A measurement of the discrimination of an item. It indicates the relationship between a response for a given item and the overall test score of the respondent. It is constrained to be between -1 and +1, with 0 being the midpoint. A high value indicates that students scoring well on the test chose this response.

### Test Item Statistics Report

Question		Summary Statistics				Reliability	
Question	Points	Graded	Correct	Incorrect	No Response	Point Biserial	P-Value
Questions1	1.00	4	3	1	0	0.87	0.75
Questions2	1.00	4	1	3	0	0.29	0.25
Questions3	1.00	4	4	0	0	-	1.00
Questions4	1.00	4	2	2	0	0.50	0.50
Questions5	1.00	4	3	1	0	0.87	0.75

## Interpreting Exam Results:

### Comparative Grade Report

The Comparative Grade Report allows you to see test statistics broken down by test form or course section. If you have defined learning objectives, a breakdown of scores for each learning objective will also be displayed in a separate table below. The Comparative Grade Report contains the following data:

- **Students:** Displays the number of students that fall into each selected category.
- **Grade:** The mean letter grade of students that fall into each category, based on the following scale:  
A = 90 – 100%; B = 80 – 89%; C = 70 – 79%; D = 60 – 69%; F = 0 – 59%  
If you wish to change the scale, indicate this on the Exam Scoring Request form. For more information on changing grade scales, see the Completing the Exam Scoring Request form section of this document.
- **Percent:** Displays the mean percent score of students that fall into each category.

The Comparative Grade Report first displays a line labeled “Overall,” which displays the **combined** total of students, the combined mean letter grade, and the combined mean percent.

The report then displays a line containing the same data for each test form or section.

Comparative Grade Report				
Overall	Students	Grade	Percent	
Overall	4	D	65.00	
Test Form				
A	2	F	50.00	
Test Form				
B	2	B	80.00	

If you have chosen to receive a Comparative Grade Report for multiple test forms and sections, the report will display a line for each section, and then a line under each section line for each test form, as in the example below:

Comparative Grade Report				
Overall	Students	Grade	Percent	
Overall	4	D	60.00	
Special Code				
001	2	C	70.00	
Test Form				
A	1	B	80.00	
Test Form				
B	1	D	60.00	
Special Code				
002	2	F	50.00	
Test Form				
A	1	F	20.00	
Test Form				
B	1	B	80.00	