

UNIVERSITY OF  
TEXAS  
ARLINGTON

## Answer Key Analysis

Instructor: ID Number - Instructor Last Name, Instructor First Name

Exam ID: 5197

Exam: Course Code - Section; Exam Title

Test Form: Form A

Scan Form: 885 - SCANTRON 4521 - KEY

Max Points: 25.00

Item	A	B	C	D	E	F	G	H	I	J
1.		X 1.00								
2.			X 1.00							
3.			X 1.00							
4.	X 1.00			X 1.00						
5.				X 1.00						
6.	X 1.00									
7.			X 1.00							
8.			X 1.00							
9.	X 1.00									
10.			X 1.00							
11.				X 1.00						
12.		X 1.00								
13.		X 1.00								
14.		X 1.00								
15.			X 1.00							
16.				X 1.00						
17.			X 1.00							
18.	X 1.00									
19.		X 1.00								
20.		X 1.00								
21.			X 1.00							
22.			X 1.00							
23.		X 1.00								
24.		X 1.00								
25.		X 1.00								

Number of Questions: 25

Number of Questions w/No Key: 0

New Grade Divisor: 25

## Exam Analysis Report

The Exam Analysis Report provides comprehensive statistical information about the distribution of test results. This report includes Standard Deviation, Cronbach's Alpha, Point Biserial Correlation, and Distractor Analysis. These tools will provide valuable feedback about how students responded to the exam and can point out important areas where students are struggling and assist with the creation of better exam questions. The pdf attachment you receive will have a title ending in *KeyAnalysis.pdf*. If you had multiple keys scanned then you will see multiple *KeyAnalysis.pdf*'s ending with a title *Form Name\_KeyAnalysis.pdf*.

Here is an explanation of row of data displayed below the basic exam information:

- **HIGH:** The highest score (number of questions answered correctly and percent of questions answered correctly) obtained by any student on the test.
- **LOW:** The lowest score (number of questions answered correctly and percent of questions answered correctly) obtained by any student on the test.
- **MEAN:** Average of all scores (number of questions answered correctly and percent of questions answered correctly) of students who took the test.
- **STANDARD DEVIATION:** Standard deviation of all scores (number of questions answered correctly) of students who took the test.
- **KR-21 SCORE:** This is a common measure of inter-item reliability.

Here is an explanation of remaining columns of data displayed below the items above:

- **ITEM:** In this column each row represents a question (item) number and the percent of students who answered it correctly. This is a measure of the difficulty of an item, the larger the percent, the easier the item.
- **PBS:** The Point Biserial Correlation is the correlation between the responses (correct or not correct) to the item and the total exam scores of the students. PBS scores range from -1 to 1. Low PBS scores for an item indicate that the scores on that item are not tracking well with the overall scores on the exam. PBS scores that should be examined for reliability are highlighted in red, green and yellow items indicate good PBS scores.
- **A THROUGH J** represent the possible responses to the item. The **TTL** sub-column under each possible response lists the number of students who picked that response for the item. The **R** sub-column under each possible response is the average test score of the students who selected that particular response and its associated standard deviation. The higher the **R** number, the better the group that chose that response did on the exam overall. So, when looking at the Point Biserial Correlation (PBS), you can immediately tell if a distractor (incorrect response) pulled students who did well on the exam away from the correct answer. In cases where students who did well on the exam chose a common incorrect response, the **R** would be higher for that response with a lower PBS. You can also quickly see that students who did not do well overall, should have been pulled away from the correct response by well written distractors. On that

item you would see a lower **R** for that response and a higher PBS. You would expect that the students who did well on the exam selected the correct response thus generating a higher **R** for that response and a higher PBS on the item. The correct response for each item is highlighted in grey.



## Exam Analysis Report

Key Name

Instructor: Instructor Last Name, Instructor First Name  
Course: Course Code - Exam Title - Section:

Exam ID: 5197  
Number of Students Tested: 83

High: 25 (100.0%)		Low: 9 (36.0%)		Mean: 20.58 (82.3%)		Median: 22.00 (88.0%)		Standard Deviation: 3.95		KR-21 Score .82	
ITEM	A	B	C	D	E	F	G	H	I	J	PBS
	TTL	R	TTL	R	TTL	R	TTL	R	TTL	R	
1 - 83.1%	12	.68/.17	69	.86/.13	2	.50/.03					.48
2 - 89.2%	3	.47/.10	5	.66/.08	74	.85/.13	1	.48/.00			.55
3 - 85.5%	5	.70/.10	5	.53/.07	71	.86/.13	2	.54/.20			.58
4 - 83.1%	7	.78/.19	10	.64/.16	4	.66/.14	62	.87/.13			.50
5 - 86.7%	6	.55/.16	5	.57/.12			72	.86/.12			.66
6 - 66.3%	55	.88/.12	1	.88/.00	12	.75/.16	15	.67/.18			.49
7 - 80.7%	12	.62/.14	3	.61/.15	67	.87/.12	1	.72/.00			.62
8 - 78.3%	4	.65/.19	9	.56/.14	65	.87/.11	4	.79/.08	1	.72/.00	.62
9 - 90.4%	75	.85/.14	2	.56/.17	2	.68/.23	4	.55/.14			.50
10 - 79.5%	2	.68/.23	3	.52/.18	66	.86/.13	11	.75/.16	1	.48/.00	.45
11 - 68.7%	2	.66/.03	13	.70/.17	10	.80/.21	57	.87/.12	1	.48/.00	.42
12 - 86.7%	3	.47/.09	72	.84/.14	4	.79/.11	4	.76/.21			.33
13 - 81.9%	4	.51/.12	68	.87/.10	3	.65/.19	7	.59/.17			.68
14 - 83.1%	2	.70/.08	69	.85/.13	1	.44/.00	11	.70/.21			.40
15 - 95.2%			79	.84/.14	3	.41/.06					.49
16 - 94.0%	1	.80/.00	2	.84/.11	2	.50/.03	78	.83/.15			.21
17 - 91.6%	1	.64/.00	4	.53/.16	76	.84/.14	2	.80/.00			.39
18 - 90.4%	75	.84/.15	2	.56/.11	6	.72/.18					.30
19 - 91.6%	1	.80/.00	76	.84/.14	6	.57/.13					.43

Understanding Your Report: Next to each item number is the % of students that answered the item correctly. The TTL column indicates the total number of students that selected the represented option. The R value is the mean score (%) and Std. Deviation of scores for a particular distractor. You would expect that the students that did well on the exam selected the correct response, thus generating a higher mean score and a higher PBS (Point Biserial Correlation). In cases where an incorrect response distracted students that did well on the exam, exhibited by a high R value, should result in a lower PBS score. PBS score ranges from -1.0 to 1.0, with a minimum desired score greater than 0.15. Refer to the color legend to identify problem items.

Report Date: Friday, March 02, 2018 04:06:17

Color Legend: Correct Incorrect Review Marginal Better Best Page: 1

## Exam Roster Report

The Exam Activity Report is a summary of each student's performance. Once you have verified that you are satisfied with the way the exam is graded this will be the report which will best allow you to enter the student's grades. There will be only one Exam Activity report for exam and it will have a PDF ending in the format *RosterReport.pdf*. In addition to basic course exam report the information explained below:

- **FORM:** The name given to the Key that was used to grade the students answer form
- **STUDENT ID:** Student ID number as entered on scan sheet. Each row represents a student.
- **STUDENT NAME:** Student Name as entered on scan sheet.
- **DATE POSTED:** Date and time exam was scanned.
- **MISSED:** Number of questions missed by that student.

- **CORRECT:** Number of questions answered correctly by that student.
- **POINTS:** Number of points student received on the exam.
- **NON-OBJ:** Points given to each test at the instruct of the
- **BONUS:** Any bonus points applied to the students score based on the grading instructions
- **TOTAL:** Total number of points the student earned for the exam.
- **MAX PTS:** Total possible points available to each student for the exam.
- **SCORE:** Exam score for the student.



### Exam Roster Report

Instructor: Last Name, First Name

Exam ID: 5197

Course: Course Code - Exame Name - Section:

Number of Students Tested: 138

Form	Student ID	Student Name	Date Posted	Missed	Correct	Points	Non-Obj	Bonus	Total	Max Pts	Score
Form A	0000000000	Last Name, First Name	03/02/2018 01:53:03	14	11	11.00	0	0	11.00	25.00	44.00%
Form D	0000000000	Last Name, First Name	03/02/2018 01:54:49	8	17	17.00	0	0	17.00	25.00	68.00%

### Student Score Report

There will be a Student Score Report for each student in a single PDF which will allow you to print the report for the entire class and pass back a grade sheet to the student that provides them with information they would like to have about their test. The pdf attachment you receive will have a title ending in *ScoreReports.pdf*. There will only be one Student Score report even if there are multiple keys.

- **STUDENT INFORMATION**
  - **STUDENT NAME: LAST NAME, FIRST**
  - **STUDENT ID**
  - **COURSE**
  - **INSTRUCTOR**
  - **EXAM ID**
  - **DATE / LOCATION**
  - **DESCRIPTION**
- **EXAM RESULTS:**
  - **REGULAR POINTS:**
  - **BONUS POINTS:**
  - **NON-OBJ POINTS:**
  - **TOTAL POINTS EARNED:**
  - **POSSIBLE POINTS:**
  - **GRADE:**
  - **ELAPSED TIME (MIN):**
- **QUESTIONS MISSED:** For questions missed students will be given question number, student's answer (an "\*" means student chose more than one response for the item, a "?" means student left answer blank for the item), and correct answer when requested by instructor. The option to have this information on the student reports must be

chosen on the scanning submittal form. Otherwise, the student score reports will only contain the information under Exam Results above.



### Student Score Report

Last Name, First Name		Exam Results	
Student ID	000000000	Regular Points:	11.00
Course:		Bonus Points:	0.00
Instructor:		Non-Obj Points:	0.00
Exam ID:	5197	Total Points Earned:	11.00
Booklet #:	N/A	Possible Points	25.00
Date/Location:	03-02-18 13: 03	Grade:	44.00%
Description:	Exam Title, Key Title	Elapsed Time (min):	0

### Questions Missed \*

(Format: Question Number. Your Answer, Correct Answer) \*

5. B, D    6. C, A    7. B, C    9. B, A    10. D, C    11. B, D    12. D, B    13. C, B    14. C, B    20. A, B  
21. D, C    23. C, B    24. C, B    25. D, B

### Score Distribution Graph

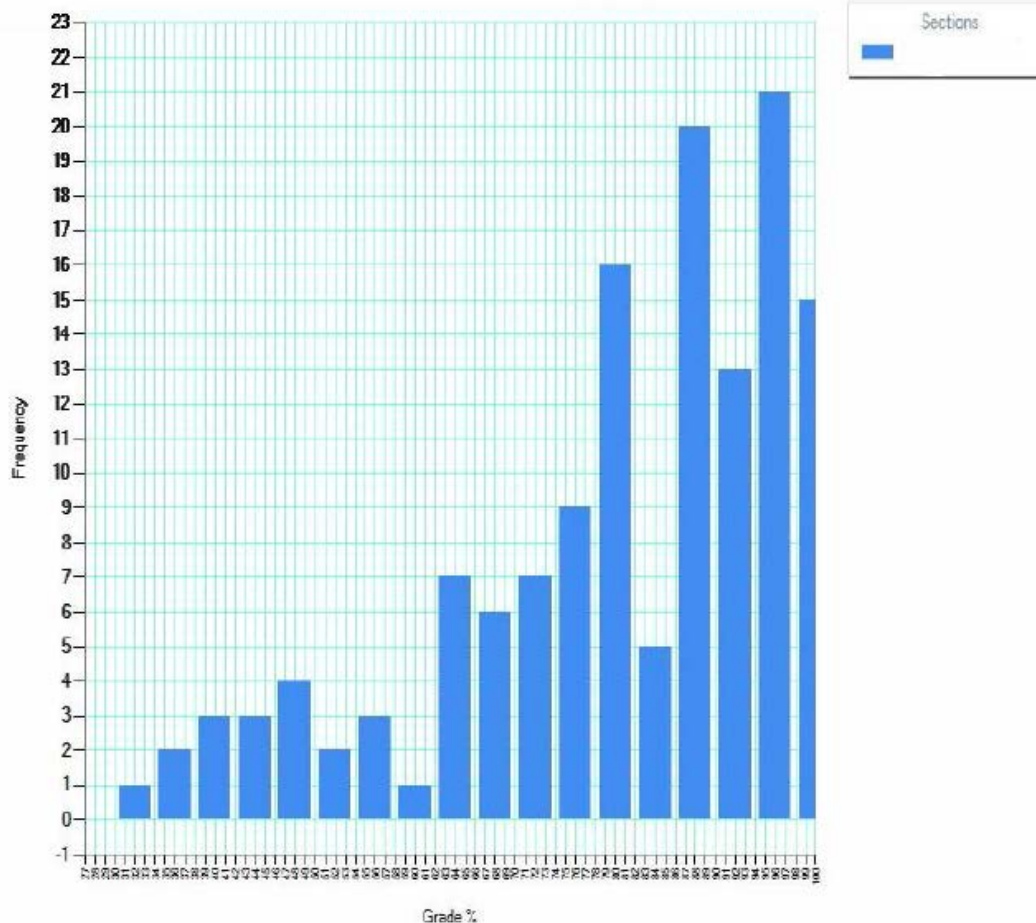
A bar graph which shows the frequency of grade percentages among the entire class for the graded Exam. This report is provided so that you can visually see the distribution of grades. The report is also formatted to be confidential should you wish to share the graph with your class. The pdf attachment you receive will have a title ending in *ScoreGraph.pdf*. There will only be one Student Score report even if there are multiple keys.



## Score Distribution Graph

Instructor: Last Name, First Name  
Exam Course Code - Section; Exam Title

Exam ID: 5197  
Number of Students Tested: 138



## CSV files

### *Incorrect Response Analysis*

An excel worksheet that details the incorrect responses that each student made. This report is provided in the event you would like to perform statistical analysis to reveal more information about the exam questions. The CSV attachment you receive will have a title ending in *IncorrectResponseAnalysis.csv*. There will only be one Incorrect Response Analysis even if there are multiple keys. The information in the report including the basic exam information is listed below.

- **STUDENT ID**
- **STUDENT LAST NAME**

- **STUDENT FIRST NAME**
- **POINTS EARNED**
- **GRADE**
- **KEY FORM**
- **QUESTIONS NUMBERED 1 TO MAX IN COLUMNS:** If a student answered a question incorrectly the incorrect response they entered will be displayed (an “\*” means student chose more than one response for the item, a “?” means student left answer blank for the item).

## *Score Report*

An excel worksheet that details the student grades. This report is provided in the event you would like to perform statistical analysis to reveal more information about the student’s grades or copy content directly into your own gradebook. The CSV attachment you receive will have a title ending in *ScoreReport.csv*. There will only be one Score Report even if there are multiple keys. The information in the report including the basic exam information is listed below.

- **STUDENT ID**
- **USERNAME**
- **STUDENT LAST NAME**
- **STUDENT FIRST NAME**
- **SPECIAL CODES**
- **VERSION ID**
- **KEY FORM**
- **MISSED NUMBER**
- **CORRECT NUMBER**
- **REGULAR POINTS**
- **BONUS # EARNED**
- **BONUS POINTS**
- **TOTAL POINTS**
- **MAX POINTS**
- **GRADE**
- **DATE SCORED**

## *Data*

An excel worksheet that provides the raw data that was read by the scanner. This report is provided in the event you would like to verify information was read properly and / or perform additional statistical analysis. The CSV attachment you receive will have a title ending in *DATA.csv*. There will only be one Score Report even if there are multiple keys. The information in the report including the basic exam information is listed below.

- **EXAM ID**
- **SEQUENCE**
- **DATE**
- **FORM DESCRIPTION**
- **SPECIAL CODES**

- KEY / TEST
- STUDENT LAST NAME
- STUDENT FIRST NAME
- SECTION
- STUDENT ID
- USERNAME
- VERSION ID
- CORRECT
- QUESTIONS NUMBERED 1 TO MAX IN COLUMNS: The students answers will be displayed for each question.