

Preview Test: Research Methodology - May exam

Test Information

Description Research Methodology (RME01A3) - May exam

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Moderator: Prof W Hollander

Instructions Complete all sections.

Any calculations should be rounded to 2 significant figures (unless otherwise stated).

You are permitted to use Microsoft Excel for table and figure generation.

Timed Test This test has a time limit of 2 hours. This test will save and be submitted automatically when the time expires. Warnings appear when **half the time, 5 minutes, 1 minute, and 30 seconds** remain. *[The timer does not appear when previewing this test]*

Multiple Attempts Not allowed. This Test can only be taken once.

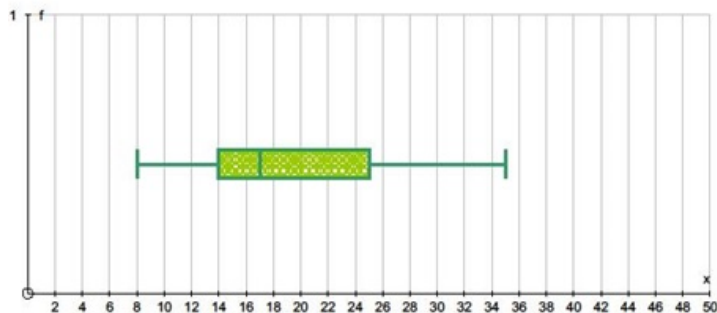
Force Completion Once started, this test must be completed in one sitting. Do not leave the test before clicking **Save and Submit**.

QUESTION 1

1 points

[Save Answer](#)

Consider the box-and-whisker plot below.



Which **one** of the following statements is **correct**?

- ☐ A. 50% of the observations are equal to 14 or more
- ☐ B. 25% of the observations are equal to 25 or more
- ☐ C. 25% of the observations are less than 17
- ☐ D. The value of the maximum observation is 50
- ☐ E. The first quartile equals 8

QUESTION 2

3 points

[Save Answer](#)

The number of friends on Facebook for a sample of 7 students is listed below:

46 53 71 88 92 107 782

The inter-quartile range is equal to:

$$\text{IQR} = Q3 - Q1 = \boxed{} - \boxed{}$$

$$= \boxed{}$$

QUESTION 3**1 points**

Save Answer

Suppose that the distribution of actual weight of students at UJ is positively skewed (Skewed to the right). If the average weight is 76kg, what would the median weight be?

- ☐ A. Larger than 76kg
- ☐ B. Smaller than 76kg
- ☐ C. 76kg
- ☐ D. Halfway between the mean and the mode
- ☐ E. There is not enough information to answer this question

QUESTION 4**1 points**

Save Answer

Consider the following sample of data:

-5 14 9 6 -8 -2

The **standard deviation** is equal to (correct to two decimal places, e.g., 3.98):

QUESTION 5**1 points**

Save Answer

The Body Mass Index BMI scores for Male and Female athletes are given below:

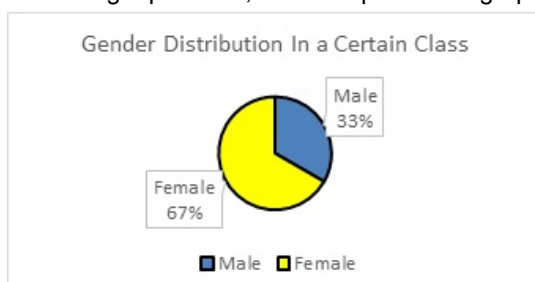
	Mean	Variance	Sample size
Female	76	110	34
Male	64	88	26

The coefficient of variation for males is equal to (In % correct to 2 decimal places):

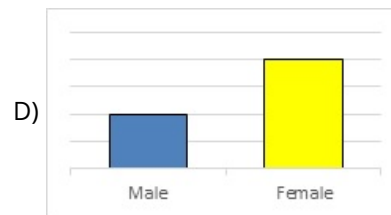
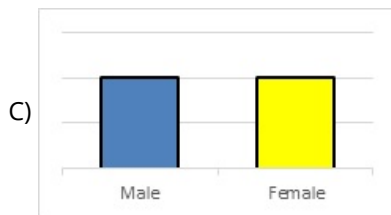
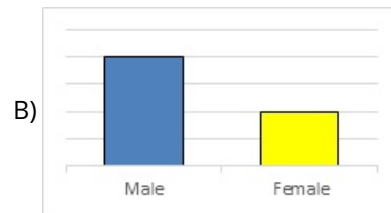
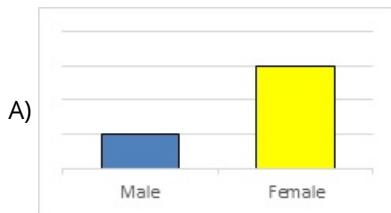
QUESTION 6**1 points**

Save Answer

In a certain class, for every male (M) student, there are two female (F) students. This can be expressed as M:F = 1:2. Using a pie chart, it can be presented graphically as follows:



The corresponding simple bar chart is given by



- ☐ A
☐ B
☐ C
☐ D

QUESTION 7

1 points

Save Answer

A group of males and females visiting the two coffee shops was asked a few questions. Consider the table below about their hot chocolate preference:

Group	Like hot chocolate	Do not like hot chocolate
Males	10	30
Females	25	35

The probability that a randomly selected customer likes hot chocolate if the person is male, is equal to (correct to 2 decimal places):

QUESTION 8

1 points

Save Answer

A group of males and females visiting the two coffee shops was asked a few questions. Consider the table below about their hot chocolate preference:

Group	Like hot chocolate	Do not like hot chocolate
Males	10	30
Females	25	35

The probability that a randomly chosen customer is female or does not like hot chocolate, is equal to: (correct to 2 decimal places):

QUESTION 9

1 points

Save Answer

A group of males and females visiting the two coffee shops was asked a few questions. Consider the table below about their hot chocolate preference:

Group	Like hot chocolate	Do not like hot chocolate
Males	10	30
Females	25	35

The probability that a randomly selected customer is male, is equal to (correct to one decimal place, e.g., 0.3):

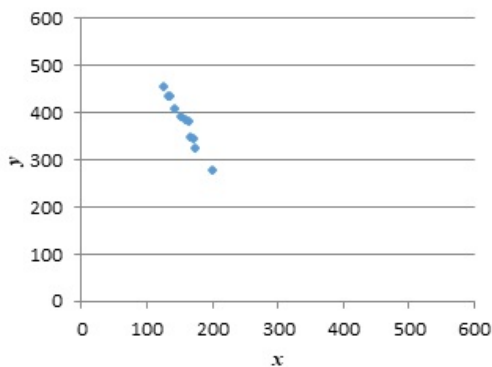
QUESTION 10

1 points

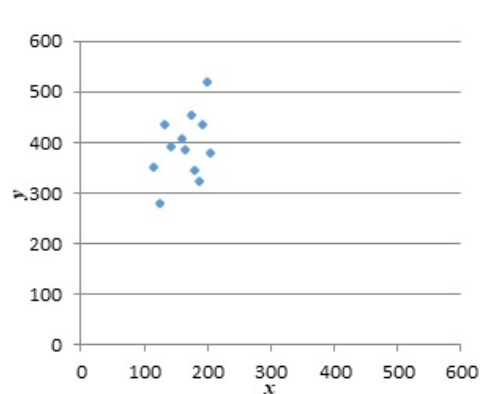
Save Answer

Which **one** of the following scatter plots describes a strong positive correlation?

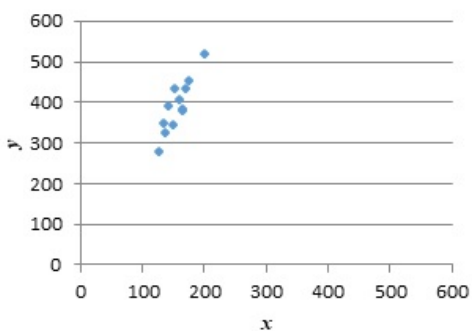
A)



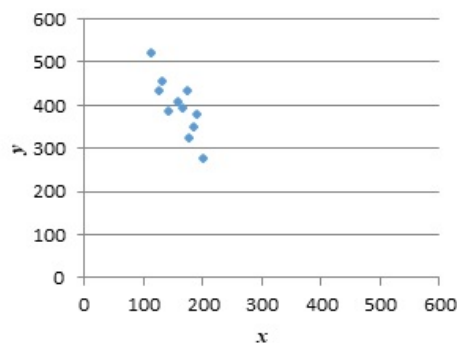
B)



C)



D)



- ☐ A
- ☐ B
- ☐ C
- ☐ D

QUESTION 11

1 points

Save Answer

Which **one** of the following statements is **incorrect**?

- ☐ A. The slope of the least squares regression line will always be negative when the correlation coefficient is negative.
- ☐ B. The steeper the slope of the least squares regression line, the stronger the correlation between the independent and the dependent variables
- ☐ C. A correlation coefficient of -0.873 is equal in strength to a correlation coefficient of +0.873
- ☐ D.

The closer the correlation coefficient, r , is to ± 1 , the better choice the independent variable is to forecast the dependent variable

QUESTION 12**1 points**

Save Answer

According to a study done by UJ students, the height for adult males is normally distributed with an average of 66 inches and a standard deviation of 2.5 inches. Suppose one adult male is randomly chosen. Let X = height of the individual.

Find the probability that the person is between 69 and 70 inches (correct to four decimal places, e.g., 0.6978).

QUESTION 13**1 points**

Save Answer

Let Z be a **standard normal** random variable. Calculate the probability that $P(0 < Z < 1.59)$. Give your answer to four decimal places.

QUESTION 14**5 points**

Save Answer

The five steps procedure when conducting a Hypothesis test is as follows:

- ▼ Calculate the p-value
- ▼ Compare the p-value with the level of significance, α
- ▼ State the null and alternative Hypotheses.
- ▼ State your conclusions
- ▼ Calculate the test statistic

QUESTION 15**1 points**

Save Answer

Which one of the following statements represents a upper-tail alternative hypothesis?

- ☐ A. The average age of personal assistants within a certain company is more than 35 years.
- ☐ B. The proportion of female UJ students is 50%
- ☐ C. The mean annual commuting cost to and from work is less than R25 000.
- ☐ D. The average useful lifetime of a tablet is 2 years.
- ☐ E. The proportion of defects is not equal to 3%.

QUESTION 16**1 points**

Save Answer

A normal distribution has a standard deviation of 1. We want to verify a claim that the mean is greater than 12. A sample of 36 is taken with a sample mean of 12.5.

$$H_0: \mu = 12$$

$$H_a: \mu \neq 12$$

The p-value is (correct to four decimal places):

QUESTION 17**1 points**

Save Answer

If the observed test statistic, $z_{stat} = 1.58$ for an two-tailed claim, then the p-value is equal to (correct to two decimal places, e.g., 0.02):

QUESTION 18**1 points**

Save Answer

Suppose the p-value is greater than α , where $\alpha = 0.05$. Which one of the following conclusions is correct?

- ☐ A. At = 0.05, we do not reject
- ☐ B. At = 0.05, we reject

QUESTION 19**1 points**

Save Answer

A certain brand of cooking oil is advertised as containing an "average of 10% saturated fats". A random sample of a 100 bottles revealed that their percentage of saturated fats had a mean of 10.9% with a standard deviation of 3.6%. If H_0 **was not** rejected at a 5% level of significance, the final conclusion will be:

- ☐ A. This brand of cooking oil does not contain an average of 10% saturated fats
- ☐ B. This brand of cooking oil contains more than 10% saturated fats
- ☐ C. This brand of cooking oil contains less than 10% saturated fats
- ☐ D. The percentage of saturated fats in this brand of cooking oil differs significantly from 10%
- ☐ E. The percentage of saturated fats in this brand of cooking oil does not differ significantly from 10%

QUESTION 20**1 points**

Save Answer

Semi-structured are conducted on the basis of a loose structure (topic guide, see below) made up of open-ended questions defining the area to be explored.

- ☐ True
- ☐ False

QUESTION 21**1 points**

Save Answer

Qualitative researchers pose research questions.

- ☐ True
- ☐ False

QUESTION 22**1 points**

Save Answer

Qualitative data methods do not require any formal analysis process or methods.

- ☐ True
- ☐ False

QUESTION 23**1 points**

Save Answer

One advantage of group data is that you have access to how people talk to each other.

- ☐ True
- ☐ False

QUESTION 24**1 points**

Save Answer

Observational data is also very useful in overcoming discrepancies between what people say and what they actually do and might help you uncover behaviour of which the participants themselves may not be aware.

- ☐ True
- ☐ False

QUESTION 25**1 points**

Save Answer

Interviews resemble everyday conversations.

- ☐ True
- ☐ False

QUESTION 26**1 points**

Save Answer

If you aim for 10 people in your group interviews, it is usually a good idea to over recruit by about 25%, ie recruit 13.

- ☐ True
- ☐ False

QUESTION 27**1 points**

Save Answer

Groups interviews typically have between 6 and 8 people.

- ☐ True
- ☐ False

QUESTION 28**1 points**

Save Answer

Group interviews could include informal, spontaneous 'chats' with groups as they are waiting for services, or meeting at a social event.

- ☐ True
- ☐ False

1 points

During an interview, the interviewer should follow the interview schedule.

- ### QUESTION 30

1 points

Focus groups should last about 90 minutes but it is better to announce to the group that it will take two hours.

- ### QUESTION 31

1 points

During qualitative research, field notes provides valuable insight into observed behaviors and should be added to the analysis of the data.

- ### QUESTION 32

1 points

With qualitative research there is the possibility of biased results.

- ### QUESTION 33

1 points

The topic guide is used mostly in semistructured interviews

- ### QUESTION 34

1 points

After interviews, small changes can be made to the interviews schedule's questions as long as it makes sense to do so.

- ### QUESTION 35

10 points

What are the ten (10) things Patton and Cochran (2002) advises a researcher to avoid during while interviewing?

https://uj.blackboard.com/webapps/assessment/take/launch.jsp?course_assessment_id=55727_1&course_id=22456_1&content_id=114648... 8/11

16 points

Save Answer

Using the above title of a journal article explain the following:

- What methodology and tools do you think could have been used in this research? Justify your answer. (6 marks)
- In order to use a mixed methods approach, discuss the changes you would make, the design and methods (tools) you would use for your changes. (10 marks)

4 points

Save Answer

List 4 factors that shape the procedures of a mixed methods study design.

3 points

Save Answer

Explain why using generic search engines like google (and google scholar) are not the best method to identify research publications

[illegible]

QUESTION 39

5 points Save Answer

The scientific method is used across disciplines to conduct research.
List the 5 main steps in the scientific method

Paragraph

Arial

3 (12pt)

Mashups

QUESTION 40

7 points Save Answer

Describe the importance and process of obtaining informed consent

Paragraph

Arial

3 (12pt)

Mashups

QUESTION 41

15 points Save Answer

The attached data sheet contains raw data from two groups of athletes.
Use Excel to calculate the means and standard deviations for the data.
Your answer should be uploaded in the form of a correctly presented table.

[RME01A3_ Exam data sheet.xlsx](#)

Paragraph

Arial

3 (12pt)

Mashups

Click

Save All Answers

Save and Submit