

191RME01A3 RESEARCH METHODOLOGY

Course Content Exams

Preview Test: Research Methodology Supplementary exam

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Test Information

Description Research Methodology (RME01A3) - July (Supplementary) 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

Which of the following levels of measurements is/are generally considered quantitative data?

I. Nominal

II. Ordinal

III. Interval

IV. ratio

- ☐ A. I only
- ☐ B. I and II only
- ☐ C. III only
- ☐ D. II and III only
- ☐ E. III and IV only

QUESTION 2**1 points**

Save Answer

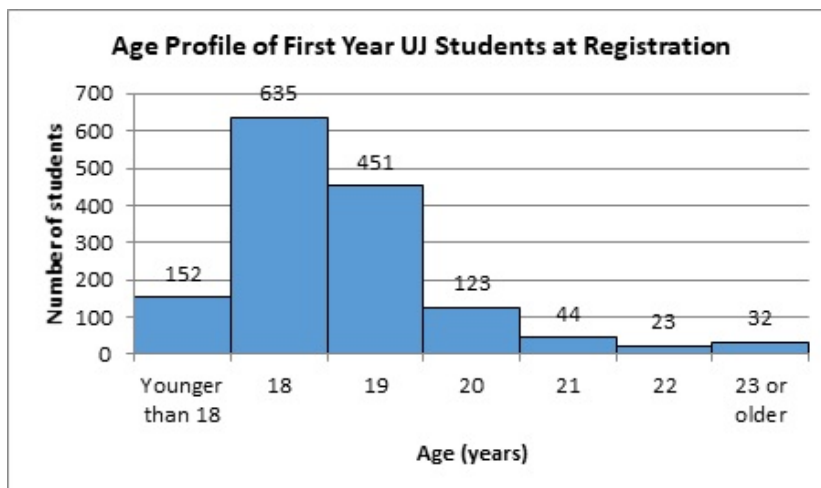
The measurement level of 4 different UJ campuses (Bunting Road, Soweto, Kingsway and Doornfontein) where students attend classes is:

- ☐ A. nominal scaled
- ☐ B. ordinal scaled
- ☐ C. ratio scaled
- ☐ D. interval scaled

QUESTION 3**1 points**

Save Answer

Consider the following graphical representation on the age profile of a sample of 1 460 students:



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

- ☐ A. The modal age (mode) is 18 years
- ☐ B. 99 students are older than 20
- ☐ C. The distribution of the age profile is positively skewed
- ☐ D. The relative frequency of age 19 is 451
- ☐ E. 67 students are either 21 or 22 years of age

QUESTION 4**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 $Q3 - Q1 =$

	-		=	

QUESTION 5

1 points

Save Answer

Suppose that the distribution of actual weight of students at UJ is symmetric (Bell-Shaped). 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 6

1 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 **standard deviation** for the number of friends on Facebook is equal to (correct to two decimal places, e.g., 312.98):

QUESTION 7

1 points

Save Answer

Data was collected on five items of interest for each of 23 employees with summary results displayed in the table below:

Measurement	Mean	Standard deviation
Height (cm)	181	5.9
Mass (kg)	89	1.2
Cholesterol (mmol/L)	6.1	0.4
Age (years)	46	3.7
Monthly salary (R'000)	43	2.2

Which item has the highest relative variability?

- ☐ A. Height
- ☐ B. Mass
- ☐ C. Cholesterol
- ☐ D. Age
- ☐ E.

Annual salary

QUESTION 8

1 points

Save Answer

A group of forty people at a health club were classified according to their gender and smoking habits, as shown in the table below. One person is selected at random from that group of forty people.

Smoking Habits

<i>Gender</i>	Smoker (S)	Nonsmoker (N)	Total
Male (M)	2	24	26
Female (F)	6	8	14
Total	8	32	40

What is the probability that the person is female and does not smoke? (correct to one decimal place, e.g., 0.3)?

QUESTION 9

1 points

Save Answer

A group of forty people at a health club were classified according to their gender and smoking habits, as shown in the table below. One person is selected at random from that group of forty people.

Smoking Habits

<i>Gender</i>	Smoker (S)	Nonsmoker (N)	Total
Male (M)	2	24	26
Female (F)	6	8	14
Total	8	32	40

If the person was male, what is the probability that he smokes? (**correct to four decimal place**, e.g., 0.3658)?

QUESTION 10

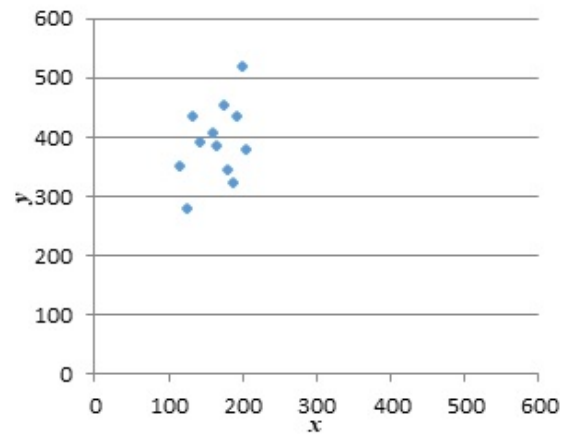
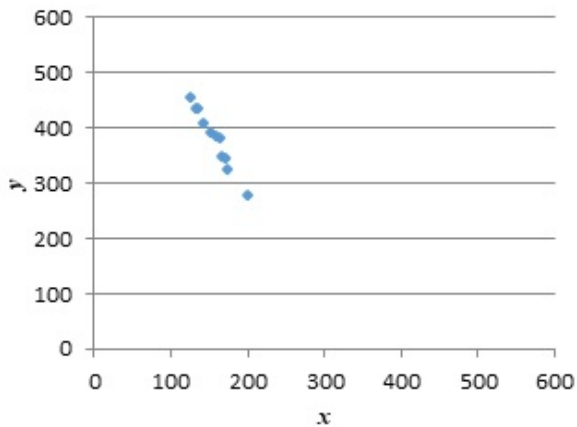
1 points

Save Answer

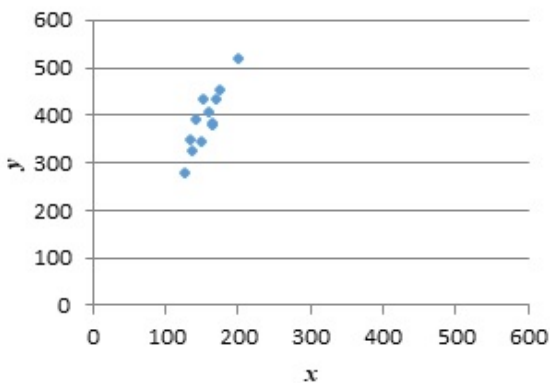
Which one of the following scatter plots describes the weakest correlation?

A)

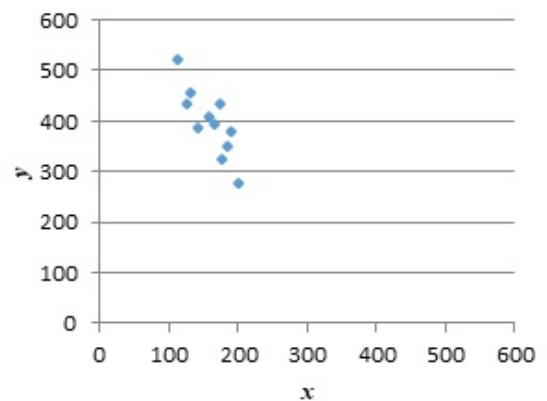
B)



C)



D)



- ☐ A
- ☐ B
- ☐ C
- ☐ D

QUESTION 11**1 points**[Save Answer](#)

Let Z be a **standard normal** random variable. Calculate the probability that $P(-1.23 < Z < 0)$. Give your answer to four decimal places.

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 65 and 69 inches (correct to four decimal places, e.g., 0.6978).

QUESTION 13**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.

The middle 90% of heights fall between

 and

. (correct to one decimal places, e.g., 0.6).

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
- ▼ State the null and alternative Hypotheses
- ▼ State your conclusion
- ▼ Calculate the test statistic

QUESTION 15**1 points**

Save Answer

Which one of the following statements represents a lower-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 at least 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.

$$H_0: \mu \leq 12$$

$$H_a: \mu > 12$$

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

QUESTION 17**1 points**

Save Answer

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

- ☐ A. At $\alpha = 0.05$, we do not reject H_0
- ☐ B. At $\alpha = 0.05$, we reject H_0

QUESTION 18**1 points**

Save Answer

If the observed test statistic, $z_{stat} = 2.17$ for an two-tailed claim, then the p-value is equal to (correct to two decimal places, e.g., 0.02):

QUESTION 19**1 points**

Save Answer

Suppose the null hypothesis, H_0 , is: a patient is not sick. Which type of error has the greater consequence?

- ☐ A. Type I
- ☐ B. Type II

QUESTION 20**1 points**

Save Answer

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

- ☐ True
- ☐ False

QUESTION 21**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

QUESTION 22**1 points**

Save Answer

One on one interviews will also tell you more about the social structure of the community in which you will be working and give you a more in-depth understanding of the context and social fabric of the community, and of how opinions and knowledge are formed in social contexts.

- ☐ True
- ☐ False

QUESTION 23**1 points**

Save Answer

Qualitative researchers pose research questions.

- ☐ True
- ☐ False

QUESTION 24**1 points**

Save Answer

Some issues, such as dissatisfaction with health services, are often more readily discussed in groups.

- ☐ True
- ☐ False

QUESTION 25**1 points**

Save Answer

The discussion starter question will present the basic topic for the session and throw the discussion open to the group as a whole.

- ☐ True
- ☐ False

QUESTION 26**1 points**

Save Answer

The topic guide is used mostly in semistructured interviews

- ☐ True
- ☐ False

QUESTION 27**1 points**

Save Answer

☐ True

☐ False

Save Answer

☐ True

☐ False

Save Answer

Save Answer

6 points

Explain the difference between a partially mixed method and fully mixed method research design.

4 points

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

4 points

List 4 types of publications that appear in academic journals

2 points

Compare descriptive and analytical study designs

[illegible]

2 points

Define validity and reliability in terms of measurement error

[illegible]

2 points

Describe the difference between internal and external validity of publications

Mashups

QUESTION 37

10 points

Save Answer

HeLa cells were biopsied from Henrietta Lacks in 1957 and have been used to develop numerous vaccines and effective drugs. However, her cells were taken and used without her permission. In fact, her family were only notified of her cell use in 1975.
Discuss, using the four ethical principles, how correct ethical procedures were not followed.

Paragraph

Arial

3 (12pt)

Mashups

QUESTION 38

10 points

Save Answer

Using the attached data sheet, calculate the BMI of the 2 groups and represent the calculated BMI using a bar graph.
[RME01A3_Sup exam data sheet.xlsx](#)

Paragraph

Arial

3 (12pt)

Mashups

Cli

Save All Answers

Save and Submit