



Technical University of Mombasa

Faculty of Applied and Health Sciences

DEPARTMENT OF MEDICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF
MEDICAL LABORATORY SCIENCES
BMLS 13M REGULAR

AML 4311: RESEARCH METHODS

SEMESTER EXAMINATION

APRIL 2014 SERIES

2 HOURS

Instructions to candidates:

This paper consists of **TWO** sections **A** and **B**

Section A -Contains MCQS, Answer **ALL** questions in **Section B**.

SECTION A - MCQs - (30marks)

1. The most frequently occurring number in a set of values is called the
 - a) Mean
 - b) Meadian
 - c) Mode
 - d) Range
 - e) Interval
2. Which measures of central tendency takes into account the magnitude of scores?
 - a) Mean
 - b) Meadian
 - c) Mode
 - d) Range
 - e) Tally
3. If a test was generally very easy , except for a few students who had very low scores, then the distribution of scores would be

- a) Positively skewed
 - b) Negatively skewed
 - c) Not skewed at all
 - d) Normal
 - e) Normal distribution
4. The _____ is the value you calculate when you want the arithmetic average
- a) Mean
 - b) Median
 - c) Mode
 - d) Deviation
 - e) All of the above
5. _____ are used when you want to visually examine the relationship between two quantitative variable
- a) Bar graphs
 - b) Pie graphs
 - c) Line graphs
 - d) Scatterplots
 - e) Frequency tables
6. A _____ is a numerical characteristic of a sample and _____ is a numerical characteristics of a population
- a) Sample, population
 - b) Population, sample
 - c) Statistics, parameter
 - d) Parameter, statistics
 - e) Sample, statistics
7. _____ results in you fail to reject the null hypothesis when null hypothesis is actually false
- a) Type I error
 - b) Type II error
 - c) Type III error
 - d) Type IV error
 - e) Type V error
8. In a study of effects of alcohol on driving ability the control group should be given
- a) A high dosage of alcohol
 - b) One-half the dosage given the experimental group
 - c) A driving test before and after drinking alcohol
 - d) No alcohol at all
 - e) Different types of alcohol
9. A study to determine the degree of relationship between two events is called

- a) Naturalistic observation
 - b) The correlational method
 - c) A controlled experiment
 - d) The survey method
 - e) Cause –effect analysis
10. A teacher believes that one group of children is very bright and that a second is below average in ability. Actually, the group are identical, but the first group progresses more rapidly than the second this demonstrates
- a) The self fulfilling prophecy
 - b) The placebo effects in a natural experiment
 - c) Observer bias is naturalistic observation
 - d) The ethical problems of field experiments
 - e) Placebo effect
11. What does it mean when subjects are said to be assigned randomly?
- a) They are assigned to experimental and control groups from a sample which is representative of larger population
 - b) They each have an equal chance of being assigned to either the experimental or control group.
 - c) They are assigned to experimental and control groups so that the group differ on some critical variable before the experiment begins.
 - d) Neither the experimenter nor the subject knows whether the subject is in the experimental or control group
 - e) Subjects are chosen depending on their wish
12. Three major ethical concerns of psychological researchers are deception, lasting harm to subjects and
- a) Morality of the question under investigation
 - b) Loss of future research possibilities
 - c) Falsified results
 - d) Invasion of privacy
 - e) Organizers providing refreshment
13. A graph that uses vertical bars to represent data is called a
- a) Line graph
 - b) Bar graph
 - c) Scatter plot
 - d) Vertical graph
 - e) Pie chart
14. The chief function of the control group in an experiment is that it
- a) Allows mathematical relationship to be established
 - b) Provides a point of reference against which the behavior of the experimental group can be compared.
 - c) Balances the experiment to eliminate all extraneous variables
 - d) Is not really necessary

- e) To increase the sample size
15. In the traditional learning experiment the effect of practice on performance is investigated.
Performance is the variable
- a) Independent
 - b) Extraneous
 - c) Dependent
 - d) Control
 - e) Subject
16. A correlation coefficient of zero means that there is
- a) A strong negative relationship between the two variables
 - b) A strong positive relationship between the two variables
 - c) A perfect positive relationship between the two variables
 - d) No relationship between the two variables
 - e) A perfect negative relationship between the two variables ?
17. A _____ is a subset of
- a) Sample, population
 - b) Population, Sample
 - c) Statistic, parameter
 - d) Parameter, statistics
 - e) Sample statistic
18. Research on the benefit of aspirin to prevent heart attacks used only male subjects in the sample.
Both men and women are given this advice. The problem with this recommendation reflects
- a) Gender bias
 - b) Courtesy bias
 - c) Cultural bias
 - d) Age bias
 - e) Lack of respect
19. Giving placebos in drug experiment is necessary to
- a) Counteract the random assignment of subjects
 - b) Counteract the side effects of the drug
 - c) Control for the effects of suggestion and expectation
 - d) Keep control subjects from knowing they have been given the drug
 - e) Increase the therapeutic effect of the drug in question
20. In a weight reeducation experiment, an overweight individual was given what the researcher called a new type of diet pill that would help curb the desire to eat. In fact the pill really contained powdered milk but ever since the individual started taking the diet pill, he has reported that his desire to eat has decreased, this illustrates

- a) Curvilinear relationship
 - b) Effect of extraneous variables
 - c) Natural experiment
 - d) Placebo effect
 - e) Drug effects
21. A variable that is presumed to cause a change in another variable is called a (n):
- a) Categorical variable
 - b) Dependent variable
 - c) Independent variable
 - d) Intervening variable
 - e) None of the above
22. A positive correlation is present when
- a) Two variables move in opposite directions
 - b) Two variables move in the same directions
 - c) One variable goes up and one goes down
 - d) Several variables never change
23. Research that is done to understand an event from the past is known as ?
- a) Experiment research
 - b) Historical research
 - c) Replication
 - d) Archival research
 - e) Scientific research
24. What is the opposite of variable?
- a) A constant
 - b) An extraneous variable
 - c) A dependent variable
 - d) A data set
 - e) An independent variable
25. Which correlation is the strongest?
- a) +.100
 - b) -.95
 - c) +.90
 - d) -1.00
 - e) -0.5
26. Computer database searches can be done:
- a) With a computer with CD-ROM drive
 - b) At the library
 - c) Online

- d) All the above
- e) None of the above

27. A research plan

- a) Should be detailed
- b) Should be given to others other for review and comments
- c) Set out the rationale for a research study
- d) All of the above
- e) Both a and c

28. Ideally the research participant's identify is not known to the researcher. This is called

- a) Anonymity
- b) Confidentiality
- c) Deception
- d) Desensitizing
- e) Selfie

29. The act of publishing the same data and results in more than one journal or publication refers to which of the following professional issues:

- a) Partial publication
- b) Duplicate publication
- c) Deception
- d) Full publication
- e) Acknowledgement

30. Which of the following is NOT found in the preliminary pages

- a) Appendix
- b) Acknowledgement
- c) Declaration
- d) References
- e) A and D

SECTION B ESSAY
(ANSWER ALL QUESTION IN THIS SECTION)

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|----|-----|---|-----------------|
| 1. | (a) | Differentiate basic and applied research | (4marks) |
| | (b) | Define health research | (2marks) |
| | (c) | Describe the characteristics of HSR | (5marks) |
| | (d) | What information should be included in the statement of the problem | (6marks) |

- (e) Statement of the problem (6marks)
- 2. (a) Describe criteria which can help in the process of selection of a research topic (14marks)
- (b) Characteristics of research (4marks)
- (c) List any four sources of information useful in preparing proposal (2marks)