



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING & MIDWIFERY SCIENCES
END OF SEMESTER DECEMBER 2022 EXAMINATIONS**

COURSE CODE AND TITLE: DOP 115 EPIDEMIOLOGY & RESEARCH METHODS

DATE: 1ST DECEMBER 2022

Duration: 2 HOURS

Start: 9:00 AM

Finish: 11:00 AM

INSTRUCTIONS

1. This exam is out of 70 marks
2. This Examination comprises THREE Sections. Section A: Multiple Choice Questions (20 marks) Section B: Short Answer Questions (30 marks) and Section C: Long Answer Questions (20 marks)
3. Answer ALL Questions.
4. Do Not write anything on the question paper -use the back of your booklet for rough work if need be.

SECTION A: MULTIPLE CHOICE QUESTIONS

(20

MARKS)

1. The following are observational analytical study designs: -
 - A. Case report, Case control
 - B. Case series, Cross sectional
 - C. Case control, Cohort
 - D. Cohort, Case study
2. Relative risk is normally used in the calculation of association in: -
 - A. Case control studies
 - B. Cohort studies
 - C. Randomized controlled trials
 - D. Case series
3. Double blinding involves: -
 - A. The patient not being aware of the random allocation
 - B. The patient and the researcher not being aware of the random allocation
 - C. The patient, the researcher and the data analyst are not aware of the random allocation
 - D. The patient, the researcher, data analyst and the sponsors are not aware of the random allocation
4. The following is a null hypothesis: -
 - A. The mean weight among males and females is the same
 - B. The mean weight among males and females is not the same
 - C. The mean weight among males and females is different
 - D. The mean weight among males and females is not equal
5. In a negatively skewed distribution, the mean generally falls to: -
 - A. The right of the median
 - B. The left of the median
 - C. The middle of median and mode
 - D. The center of the distribution
6. Age, height and weight belong in which level of measurement: -
 - A. Ordinal
 - B. Ratio
 - C. Interval
 - D. Nominal
7. The following can represent a strong correlation in which an increase in the independent variable leads to a decline in the dependent variable can be framed as: -
 - A. 0.2
 - B. -0.2
 - C. 0.7
 - D. -0.7
8. In a scientific investigation, the first step is: -
 - A. Reporting your results
 - B. Perceiving a question
 - C. Developing a topic
 - D. Testing a hypothesis

9. Data collection about everyone in group or population and has the advantage of accuracy and detail is: -
 - A. Survey
 - B. Census
 - C. Probability sampling
 - D. Cluster sampling
10. The degree with which an instrument measures the attribute it is supposed to be measuring is called: -
 - A. Specificity
 - B. Validity
 - C. Reliability
 - D. Objectivity
11. Descriptive epidemiology focuses on the description of the following elements: -
 - A. Place, Person, Pattern
 - B. Place, Person, Time
 - C. People, Place, Pattern
 - D. People, Time, Frequency
12. The following are the main features of Experimental research: -
 - A. Control, Sampling, Manipulation
 - B. Control, Randomization, Manipulation
 - C. Sampling, Randomization, Correlation
 - D. Control, Manipulation, Placebo
13. The Boolean operator function that provides results that contain the first keyword but not the second during literature review is: -
 - A. AND
 - B. OR
 - C. IF
 - D. NOT
14. Research type whose main trait is based on collaboration between researcher and member of the community in order to come up with solutions is: -
 - A. Action Research
 - B. Evaluation Research
 - C. Applied Research
 - D. Implementation Research
15. The inferential statistical method that is best suited to establish the relationship between a categorical dependent variable and a categorical independent variable is: -
 - A. T test
 - B. Analysis of Variance (ANOVA) test
 - C. Chi square test
 - D. Correlation test
16. The following data presentation method is the best suited graphical presentation of categorical data: -
 - A. Line graph
 - B. Scatter plot
 - C. Histogram
 - D. Bar diagram

17. The following is a qualitative research method: -
- Quasi-experimental research
 - Correlational research
 - Grounded Theory research
 - Experimental research
18. Type I error occurs when: -
- The null hypothesis is rejected when it should have been retained
 - Accepting the null hypothesis when it should have been rejected
 - Considering the alternative hypothesis as false when it actually it was true
 - When the obtained p-value is higher than 0.05
19. The MAIN aim of review the existing literature is to: -
- To make sure you have a long list of references
 - Because without it, you could never reach the required word-count
 - To find out what is already known about your area of interest
 - To help in your general studying
20. The error that results in distortion in the measure of association that occurs when the participants' pool of the investigation is not representative of the target population: -
- Observers bias
 - Selection bias
 - Attrition bias
 - Non-response bias

SECTION B: SHORT ANSWER QUESTIONS (30 MARKS)

- Describe the cohort study design (5 Marks)
- An oncology study nurse conducted a case control study that tried to establish the association between the occurrence of alopecia (hair loss) and radiation therapy. Following review of records of 300 patients the following 2x2 contingency table was developed.

	Alopecia		Total
	Alopecia Present (+)	Alopecia Absent (-)	
Radiation treatment	200	20	220
No Radiation treatment	48	32	80
Total	248	52	300

- Identify the: - (1 Mark)
 - Outcome of interest
 - Exposure
- Calculate the Odds ratio (4 Marks)
- Conclusion (2 Marks)

3. The following data was collected among patients who had been diagnosed with colorectal cancer. The figures show the survival time (in years) from the time of diagnosis to the time of death for 13 individuals.
4, 5, 8, 5, 10, 11, 13, 12, 4, 7, 7, 12, 7
- a) Calculate the mean (2 Marks)
 - b) Identify the median (1 Mark)
 - c) Calculate the IQR (2 Marks)
 - d) Calculate the Standard Deviation (3 Marks)
4. State the five (5) elements of a good research question (5 Marks)
5. State five (5) elements of an informed consent (5 Marks)

SECTION C: LONG ANSWER QUESTION – (20 MARKS)

1. You are interested in conducting a study to find out the uptake of cervical cancer screening among women who have undergone female genital mutilation in county X.
- a) Determine the research design you will use and give a justification (3 Marks)
 - b) State three (3) specific objectives that you might have in this study (3 Marks)
 - c) Outline four (4) data collection methods for qualitative research method (4 Marks)
 - d) List four (4) secondary sources of literature (2 Marks)
 - e) Explain four (4) ethical principles you would apply in this study (8 Marks)