

**OCTOBER 2023
EBS 401
INTRODUCTION TO SCIENTIFIC
INVESTIGATIONS
30 MINUTES**

Candidate's Index Number
Signature:

**UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
SCHOOL OF EDUCATIONAL DEVELOPMENT AND OUTREACH
INSTITUTE OF EDUCATION**

**COLLEGES OF EDUCATION
FOUR-YEAR BACHELOR OF EDUCATION (B.ED)
FOURTH YEAR, SECOND SEMESTER MID-SEMESTER QUIZ, OCTOBER 2023**

**23RD OCTOBER 2023 INTRODUCTION TO SCIENTIFIC 3:00 PM – 3:30 PM
INVESTIGATIONS**

**Answer ALL the questions.
[20 MARKS]**

Items 1 to 20 are stems followed by four options lettered A to D. Read each item carefully and circle the letter of the correct or best option.

1. The process of determining the magnitude of a quantity in relation to a predetermined standard is known as
 - A. measurement.
 - B. scale.
 - C. standard.
 - D. value.
2. A measurement is a quantitative description of one or more fundamental properties compared to a
 - A. scale.
 - B. standard.
 - C. unit.
 - D. value.
3. Which one of the following is **not** a characteristic of a unit?
 - A. Convenience
 - B. Infinity
 - C. Relevance
 - D. Well defined

4. The result of measurement of a physical quantity is expressed in terms of a
 - A. scale.
 - B. standard.
 - C. unit.
 - D. value.

5. The digits which tell us the number of units we are reasonably sure of having counted in making a measurement are called
 - A. measurement.
 - B. precision.
 - C. significant figures.
 - D. units.

6. The symbol(s) for the Standard Unit of Luminous intensity is
 - A. cd
 - B. Cd
 - C. Li
 - D. LI

7. What is the standard unit prefix for the multiple 10^{15} ?
 - A. exa
 - B. peta
 - C. tera
 - D. zetta

8. What are the significant figures of the following numbers? **0.000458** and **2000.56**.
 - A. 3 and 1 respectively
 - B. 3 and 4 respectively
 - C. 3 and 6 respectively
 - D. 6 and 3 respectively

9. The case with which the readings of a measuring instrument can be read is referred to as
 - A. calibration.
 - B. readability.
 - C. repeatability.
 - D. reproducibility.

10. The process of framing the scale of the instrument by applying some standardized signals is called
 - A. calibration.
 - B. readability.
 - C. repeatability.
 - D. reproducibility.

11. A proposed explanation for an observation is called
 - A. hypothesis.
 - B. law.
 - C. model.
 - D. theory.

12. A dependent variable basically depends on the independent variable which is also known as variable.
- A. basic
 - B. general
 - C. specific
 - D. treatment
13. A claim that is contradictory to the null hypothesis is known as a/an
- A. alternative hypothesis.
 - B. assumption.
 - C. negation.
 - D. variable.
14. Models that involve a deliberate simplification or distortion of something complicated with the objective of making it more tractable or understandable is known as models.
- A. Analogical.
 - B. Idealized
 - C. Phenomenological
 - D. Scale
15. Which one of the following is **not** an advantage of Science Models? Models
- A. are used for communication.
 - B. are used to make and test predictions.
 - C. build scientific knowledge.
 - D. cannot include all the details of the object that they represent.
16. Which one of the following is **false**?
- A body of descriptions of knowledge can be called a theory if it fulfils the following criteria:
- A. It can be subjected to minor adaptations to account for new data that do not fit it perfectly, as they are discovered, thus increasing its predictive capability over time.
 - B. It is inconsistent with pre-existing experimental results and at least as accurate in its predictions as are any pre-existing theories.
 - C. It is well-supported by many independent strands of evidence, rather than a single foundation.
 - D. It makes falsifiable predictions with consistent accuracy across a broad area of scientific inquiry.
17. A statement that is accepted without evidence is referred to as a/an
- A. assumption.
 - B. hypothesis.
 - C. law.
 - D. theory.
18. A statement that describes an observable occurrence in nature that appears always to be true is known as scientific
- A. hypothesis.
 - B. law.
 - C. model.
 - D. theory.

19. Which **one** of the following laws states that at a constant temperature, the pressure of a given quantity of gas varies inversely with its volume? Law.
- A. Boyle's
 - B. Coulomb's
 - C. Faraday's
 - D. Gauss'
20. Instruments that record continuously the variation of the magnitude of the electric quantity for a definite period of time is called instrument.
- A. Absolute
 - B. Indicating
 - C. Integrating
 - D. Recording