



UNIVERSITY OF GHANA

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DEPARTMENT OF TEACHER EDUCATION
SCHOOL OF EDUCATION AND LEADERSHIP
COLLEGES OF EDUCATION

END OF SEMESTER ONE EXAMINATIONS FOR LEVEL 100, 2022/2023
B.ED. PROGRAMME

COURSE CODE: UGTE 101

COURSE TITLE: INTRODUCTION TO INTEGRATED SCIENCE I

Instruction: Answer all questions in Section A and any three questions in Section B.

Time: 2 hours

SECTION A

[25 Marks]

Answer all the questions in this section.

1. A class "A" fire can basically be put out with by
 - A. dry powder
 - B. foam
 - C. some wet chemical
 - D. water

2. Flammable materials, like alcohol, should never be dispensed or used near
 - A. combustibles
 - B. fuel
 - C. open air
 - D. open flame

3. The following are scientific attitudes, **EXCEPT**
 - A. encouragement
 - B. flexibility of ideas
 - C. perseverance
 - D. respect for evidence

4. Which of the following is classified as a pure science?
- A. Biology
 - B. Medicine
 - C. Metallurgy
 - D. Psychology
5. The unit for absolute temperature is _____.
- A. Degrees Celsius
 - B. Joule
 - C. Kelvin
 - D. Watt
6. The classification of matter includes all the following EXCEPT _____.
- A. living and non-living solid, liquid and gas.
 - B. mixtures and pure substance
 - C. solid, liquid and gas
 - D. tangibles and intangibles
7. During a lesson on 'concept of matter', a Basic four (4) teacher gathered a stone, water and an inflated balloon. Which aspect of the concept of matter is the teacher likely to teach?
- A. Change of state of matter
 - B. Diversity of matter
 - C. Particulate nature of matter
 - D. State of matter
8. Which of the following demonstrates the use of ice block, water and kettle in an experiment to teach concept of matter?
- A. Change of state of matter
 - B. Diversity of matter
 - C. Properties of matter
 - D. State of matter
9. The force which opposes the relative motion of two surfaces in contact is _____.
- A. electrostatic force
 - B. frictional force
 - C. gravitational force
 - D. magnetic force

10. The force of attraction between molecules of the same substances is _____.

- A. adhesion
- B. cohesion
- C. molecular force
- D. compressional force

11. The predetermined level of knowledge, skills and or attitudes that a learner attains by a set stage of education is referred to as _____.

- A. content standard
- B. core competencies
- C. indicators
- D. strands

12. All the following are products of science and technology EXCEPT _____.

- A. computer
- B. electric pressing iron
- C. mobile phone
- D. soil

13. According to the basic science curriculum, _____ are the broad areas/sections of the science content to be studied.

- A. indicators
- B. strands
- C. content standard
- D. core competencies

14. The human body's temperature of 37°C will be equivalent to _____ on the thermodynamic scale.

- A. 273K
- B. 310K
- C. 337K
- D. 373K

15. The core competencies that Basic School teachers are supposed to develop in their learners include the following EXCEPT _____.

- A. creativity and innovation
- B. cultural identity and global citizens
- C. differentiation and Scaffolding
- D. digital literacy

16. Which is the odd one?

- A. Burette
- B. Pipette
- C. Test tube
- D. Volumetric flask

17. He is known as the father of atomic theory. Who is he?

- A. Anaximander
- B. Anaximenes
- C. Leucippus
- D. Thales

18. The process where a substance changes directly from a gaseous state to the solid state without going through the liquid phase is referred to as

- A. condensation
- B. deposition
- C. evaporation
- D. sublimation

19. Standard symbols are very useful and they give precautions against _____ in life.

- A. first aid
- B. hazards
- C. precautions
- D. risks

20. He studied the heavens and tried to develop a unifying theme that would explain the movement of the heavenly bodies (the planets and stars). Who is he?

- A. Archimedes
- B. Leucippus
- C. Imhotep
- D. Thales

21. Mr. Awudu represents his observations, ideas, theoretical models or conclusions by talking, writing, drawing, making physical models and so forth. To Mr. Awudu, he is

- A. observing
- B. communicating
- C. hypothesising
- D. inferring

22. A toy car of mass 0.5 kg is moving with a velocity of 2 m/s. Calculate its kinetic energy.

- A. 0.25 joules
- B. 2.5 joules
- C. 25 joules
- D. 250 joules

23. If a science teacher trainee is asked to identify one fundamental unit in a science quiz, which of the following units(s) will be selected?

- A. Joule
- B. Metre
- C. Newton
- D. Coulomb

24. Which of the following would you recommend to a learner who has been tasked to state one derived quantity?

- A. temperature
- B. luminous intensity
- C. density
- D. mass

25. When does the axis of the Northern Hemisphere point most towards the sun?

- A. March 21
- B. June 21
- C. September 21
- D. December 21

SECTION B

[75 Marks]

Answer any three questions in this section.

1. a. State **five** (5) effects of force. (5 marks)
b. How will you teach forces to a primary 3/6/ JHS 2 student? (12 marks)
c. State the type force applied in the following activities.
 i. String of guitar played.
 ii. A fish swimming in water.
 iii. Learner squeezes an orange.
 iv. When a stone is thrown into space and is it pulled back
d. What is the difference between adhesion and cohesion forces? (4 marks)

2. a. State three (3) advantages of friction. (6 marks)
b. How will you guide a primary 1/4/JHS learner to determine the density of an irregular object like a stone? (16 marks)
c. What are safety symbols or signs? (3 mark)

3. a. How will you teach scientific attitudes that student teachers are supposed to acquire? (12 marks)
b. In a tabular form, mention any **two** (2) fundamental and derived quantities each, their units and the measuring instruments used to measure them. (12 marks)
c. Explain the following terms as in science; (8 marks)
 i. Tentative
 ii. Humanistic
 iii. Public
 iv. Unique

4. a. i. What is Scientific Method? (2 marks)
 ii. Mention **two** (2) importance of scientists using scientific method. (2 marks)
b. State any **two** (2) safety precautions in the science laboratory for each of the following.
Teachers i.
 ii.
Students i.
 ii. (4 marks)
c. With the aid of diagram, show the difference between Perihelion and Aphelion. (6 marks)
d. Explain how you will teach friction to a primary 4/6/ JHS 2 student? (12 marks)

5. a. Mention two skills children will show when they have self-awareness (4 marks)
b. Copy and complete the table on physical quantities and the instruments for measuring them. (5 marks)

Quantity	Instrument
Atmospheric pressure	
Electric current	
Electric potential	
Luminous intensity	
Length	

- c. State any four (4) general rules for handling chemicals. (4 marks)
d. How will you teach the properties of matter to a primary or JIIS student? (12 marks)