STUDENT'S ID NO:_____ SIGNATURE: _____

UNIVERSITY OF GHANA

DEPARTMENT OF TEACHER EDUCATION

SCHOOL OF EDUCATION AND LEADERSHIP

COLLEGES OF EDUCATION

END OF SEMESTER ONE EXAMINATIONS FOR LEVEL 100, 2023/2024

B.ED. PROGRAMME

COURSE CODE: **UGTE 101**

COURSE TITLE: **INTRODUCTION TO INTEGRATED SCIENCE 1**

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. Living organisms can be differentiated from non-living things by all the following **except**
   A. Similarities
   B. Differences
   C. Life processes
   D. Possession of cell

2. An object that is lower in density than water will_____ in water.
   A. float
   B. sink
   C. be displaced
   D. dissolve

3. Which of the following is **not** an SI unit?
   A. Metre
   B. Candela
   C. Seconds
   D. Yard

4. The equivalent of 1 N (one newton) is
   A. $1 kgms^{-2}$
   B. $1\ kgms^{-1}$
   C. $1\ kgm^2$
   D. $1kgms^2$

STUDENT'S ID NO:_____ SIGNATURE: _____

5. Particles of matter can be made up of all the following **except** _____.
   A. Atoms
   B. Molecules
   C. Moles
   D. Ions

6. Archaeological and anthropological evidence suggest that humans have lived through several periods in the past. The prehistoric period is the time between the use of the first _____ by humans and the invention of writing.
   A. bronze stone
   B. stone tolls
   C. curved tools
   D. stone tools

7. Scientific evidence suggests that modern humans spread from Africa to other lands and gradually developed ways to adapt to their _____.
   A. destination
   B. environment
   C. niche
   D. habitat

8. An ancient Greek philosopher and scientist, the father of the life sciences is_____.
   A. Anaximenes
   B. Archimedes
   C. Aristotle
   D. Thales

9. '**Eureka,**' which means **"I have found it,"** was associated with_____.
   A. Anaximenes
   B. Archimedes
   C. Aristotle
   D. Thales

10. An example of pure science is _____.
    A. astronomy
    B. history
    C. psychology
    D. sociology

11. Skillful handling of tools and objects to accomplish a task is termed_____.
    A. classifying
    B. manipulating
    C. measuring
    D. Observing

STUDENT'S ID NO:_____ SIGNATURE: _____

12. Flammable materials, like alcohol, should never be dispensed or used near _____.
    A. an open door
    B. an open flame
    C. another student
    D. a sink

13. Francis Bacon and Rene Descartes both developed empirical methods of generating knowledge.
    A. False
    B. True

14. The boiling point of alcohol is 78°C. What is this temperature in Kelvin scale?
    a. 78K
    b. 351K
    c. 373K
    d. 375K

15. Humans have observed the heavens and tried to make sense of the seasonal changes in the position of the sun, moon, and stars since _____-.
    A. middle age times
    B. modern science time
    C. pre-historic times
    D. stone age times

16. All mechanical forces are _____.
    A. applied forces
    B. normal forces
    C. contact forces
    D. non-contact forces

17. It is the support force exerted upon an object that is in contact with another stable object. Which force is it?
    A. Contact force
    B. Applied force
    C. Normal force
    D. Frictional force

18. The force that acts in a direction opposite motion through a gas is called .....
    A. Gravitational force
    B. Air resistance force
    C. Electrostatic force
    D. Sliding force

STUDENT'S ID NO:_____ SIGNATURE: _____

19. The basic unit's name for pressure is _____.
    A. Joule
    B. Watt
    C. Volt
    D. Pascal

20. If 25cm³of a quantity of wood ash has a mass of 45g. Calculate the density of the wood ash in Kgm³.
    A. 1.8g/cm³
    B. 1800kg/m³
    C. 1.8x 10³g/m³
    D. 1.8x10²g/m³

21. The force in fluids that makes objects weigh less than they do when outside the fluid is called _____.

22. In Vygotsky's view, learning is an inherently social process. Through interacting with others, learning becomes integrated into an individual's understanding of the world. This child development theory also introduced the concept of the _____.

23. The sun is visible for 24 hours in the Arctic Circle for each day and darkness in the Antarctic Circle for 24 hours, lasted for several months, then the length of day and night at the Equator will be _____.

24. It helps engage the most - timid student by creating a fun atmosphere and tend to make students forget some of their usual anxieties and make them participate in the lesson. What is it? _____.

25. The state of matter which consists of super energetic particles in the form of ionized gases is called _____,

SECTION B (75 marks)

ANSWER **THREE** QUESTIONS FROM THIS SECTION. EACH QUESTION CARRIES **25 MARKS**

Q1 **i** Explain the following terms as used in assessment:

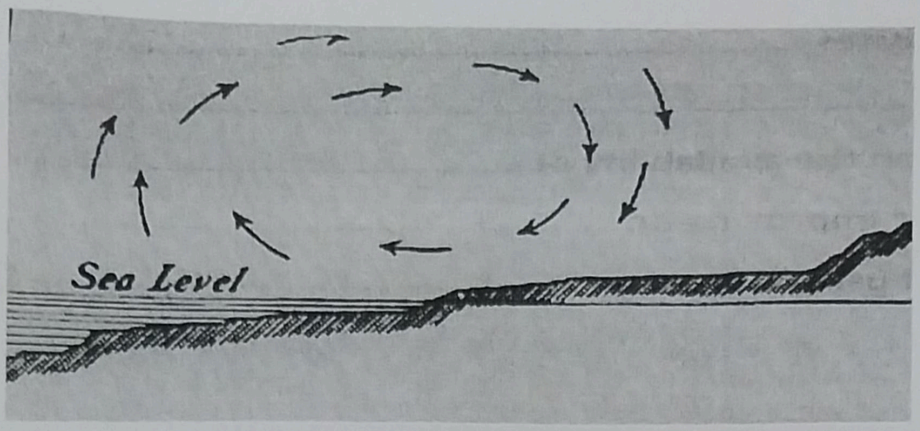
a. Assessment **of** learning **2 marks**

b. Assessment **for** learning **2 marks**

c. Assessment **as** learning **2 marks**

ii The diagram below illustrates a phenomenon caused by the unequal heating of the sea and the earth. Study it carefully and use it to answer the questions that follow:

STUDENT'S ID NO:_____ SIGNATURE: _____



	a.	Identify the phenomenon.	**2 marks**
	b.	Does it occur during the day or night?	**2 marks**
	c.	Briefly describe how the phenomenon occurs.	**4 marks**
iii	**a.**	Outline the types of inquiry-based learning and explain any **two** (2) of them.	**6 marks**
	b.	Discuss the child's study style.	**5 marks**

Q2	**i**	Explain what happens to the particles in a liquid during boiling.	**4 marks**
	ii	Explain the terms:	
		a. public self-awareness	**3 marks**
		b. private self-awareness.	**3 marks**
	iii	Answer the following questions:	
		a. Explain to a basic **3 (B3)** pupil how day and night occurs.	**2 marks**
		b. List **two** (**2**) general laboratory skills that could prepare students to work safely.	**2 marks**
		c. Identify any **three** (3) ways by which friction on surfaces can be reduced.	**3 marks**
		d. A gold metal which is to be used to make a necklace has a mass 90g on a beam balance. When it was immersed in a measuring cylinder containing water, the level rose from 55cm^3 mark to 95cm^3 mark. What is the density of the piece of gold?	**3 marks**
	iv	Describe the arrangement and movement of particles in each of the **three** (**3**) states of matter.	**6 marks**

Q3	**i**	a.	Describe how you as a science teacher will give a First Aid treatment to a pupil who has had a serious shock.	**6 marks**
		b.	What is a frictional force?	**4 marks**
			State **two** (**2**) advantages and disadvantages each of friction.	
		c.	List **four** (4) aims that the science curriculum is designed for to help learners.	**4 marks**
	ii	a.	Fire outbreak is becoming too common in the Ghanaian	**4 marks**

			Community of late. As a science teacher, list **four** (4) possible causes of fire outbreaks in your community.	
		b.	Why is first aid important?	**4 marks**
		c.	Mention **four** (4) instruments that are used to measure the length.	**4 marks**
Q4	**i**	a.	Differentiate between scalar and derived quantities.	**4 marks**
		b.	List **three** (3) derived quantities with their units.	**3 marks**
		c.	List **four (4)** things that can be found in a first aid box.	**4 marks**
		d.	State **three (3)** approaches the curriculum emphasizes on to ensure every leaner benefit and attain the expected level of learning outcomes.	**3 marks**
	ii	a.	As a science teacher, list the learning domains you will allow your learners to acquire as the basis for instruction and assessment.	**6 marks**
		b.	Write down the reading accuracies of the following instruments: i) your watch, ii) your ruler, iii) a micrometer screw gauge iv) Vernier calipers, v) beam balance.	**6 marks**
Q5	**i**	a.	Outline **four** (4) learning strategies for the 21st century teacher.	**4 marks**
		b.	Define force? A force of 1000N act on a body of mass 100000g; Calculate the acceleration of the body?	**6 marks**
	ii	a.	What is misconception? State **three (3)** misconceptions in science.	**6 marks**
		b.	Distinguish between rotation and revolution in terms of the earth movement.	**4 marks**
		c.	Tabulate **three (3)** differences between living thing and non-living things.	**3 marks**
		d.	State **two (2)** safety rules in the science classroom	**2 marks**