

STUDENT'S ID NO: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_



UNIVERSITY OF GHANA

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DEPARTMENT OF TEACHER EDUCATION

SCHOOL OF EDUCATION AND LEADERSHIP

COLLEGES OF EDUCATION

END OF SEMESTER TWO EXAMINATIONS FOR LEVEL 300, 2022/2023

B.ED. PROGRAMME

COURSE CODE: TEUP 306

COURSE TITLE: PREPARING TO TEACH UPPER PRIMARY SCIENCE

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*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. In the human digestive system, large amount of water is absorb in the .....
  - a. Duodenum
  - b. Large intestines
  - c. Small intestine
  - d. Stomach
  
2. Lipase is an enzyme responsible for the digestion of .....
  - a. Carbohydrates
  - b. Lipids
  - c. Proteins
  - d. Starch
  
3. The following are main ways of making a magnet except .....
  - a. By magnetic induction
  - b. Hammering
  - c. Stroking method
  - d. Using an electrical current
  
4. Which of the following is an accessory organ?
  - a. Intestines
  - b. Mouth
  - c. Pancreas
  - d. Stomach
  
5. The process of making a magnet to lose its magnetism is known as
  - a. Demagnetization
  - b. Magnetisation
  - c. Magnetic induction
  - d. Stroking
  
6. Which of the following is present in exhaled air?
  - a. Carbon dioxide
  - b. Hydrogen
  - c. Nitrogen
  - d. Oxygen
  
7. In which part of human beings are the lungs situated?
  - a. Abdominal cavity
  - b. Diaphragm
  - c. Stomach
  - d. Thoracic cavity

8. The adult mosquito lays eggs, which hatch into .....
- Embryo
  - Imago
  - Larva
  - Pupa
9. Which of the following is not a common breeding habitat for mosquito larvae?
- Clean, stagnant water
  - Flower vases with fresh water
  - Ponds
  - Running streams
10. What do mosquito pupae primarily do in their aquatic environment?
- Feed on algae
  - Lay eggs
  - Swim-and-filter-feed
  - Rest-and-develop into adult
11. Which type of adult mosquito typically feeds on blood?
- Both males and females
  - Females
  - Males
  - None of them
12. How do mosquitoes locate their hosts for a blood meal?
- By following a specific trail
  - By listening to their heartbeat.
  - By sight
  - By using their sense of smell
13. Which part of the digestive system serves as a temporary storage and mixing area for food before it enters the small intestine?
- Large intestine
  - Liver
  - Oesophagus
  - Stomach
14. What is the function of the gall bladder in the digestive system?
- Absorption of nutrients
  - Mixing of stomach content
  - Production of digestive enzymes
  - Storage of bile

15. What is the role of pancreas in the digestive system?
- Production of digestive enzymes
  - Production of hydrochloric acid
  - Production of insulin
  - Production of mucus
16. Heat flows naturally from a point at lower temperature to another point at higher temperature.
- False
  - True
17. The quantity of heat contained in a body depends on the following except .....
- The mass of the body
  - The temperature of the body
  - The source of the heat
  - Type of material
18. The quantity of heat energy required to raise the temperature of a body by one kelvin is called.....
- Heat capacity
  - Heat content
  - Specific heat capacity
  - Temperature gradient
19. The SI unit for specific heat capacity is .....
- $J^0C^{-1}$
  - $J K^{-1}$
  - $J kg^{-1}$
  - $J kg^{-1} K^{-1}$
20. Which of the following is not affected by heat application?
- The mass of a body
  - The state of a body
  - The volume of a body
  - The Water Cycle
21. The following are processes by which magnets can be demagnetized EXCEPT
- Hammering
  - Heating
  - Magnetic induction
  - Rough handling
22. Magnetic lines of force is a series of lines running from
- North Pole to the North Pole
  - North Pole to the South Pole
  - North Pole to the West Pole
  - South Pole to the North Pole

23. The mosquito larvae breathe through spiracles located on their  
a. Eighth abdominal segment  
b. Fifth abdominal segments  
c. First abdominal segment  
d. Third abdominal segments
24. Neutral point is point within a magnetic field where the resultant magnetic flux density is  
a. Zero and hence no magnetic force is experienced  
b. Zero and hence magnetic force is experienced  
c. Zero and hence greater magnetic force is experienced  
d. Zero and hence repulsive magnetic force is experienced
25. The mosquito larvae breathe through .....  
a. Abdomen  
b. Nostrils  
c. Spiracles  
d. Thorax

## SECTION B

[75 Marks]

Answer any three questions in this section.

1. a. What is complete metamorphosis? 2 marks  
b. Describe the four main stages in the life of a mosquito, including the specific characteristics and events that occur at each stage. 10 marks  
c. Explain the significance of stagnant water in the mosquito life cycle. 6 marks  
d. Describe the primary function of the alveoli. 3 marks  
e. Explain how the alveoli are adapted for this function. 4 marks
2. a. Define the following 3 marks  
(i) Electromagnet 3 marks  
(ii) Aerobic Respiration 3 marks  
(iii) Magnetization 3 marks
- b. What is the temperature change when 10kg of iron are supplied with 400J of energy.  
Take specific heat capacity of iron to be 470 J/Kgk 8 marks  
c. (i) State two similarities between aerobic and anaerobic respiration 4 marks  
(ii). State the Ohms law 4 marks
3. a. State four uses of electromagnets 4 marks  
b. Explain the following terms 3 marks  
(i) Conduction

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|--|---------|
| (ii) Convection  | 3 marks |
| (iii) Radiation  | 3 marks |
| c. (i) State the stages of the life cycle of a mosquito  | 8 marks |
| (ii) What is respiration?  | 4 marks |
|  |         |
| 4. a. Explain the following terms and give two examples for each.  |         |
| i. Electrical Conductors   | 4 marks |
| ii. Electrical Insulators  | 4 marks |
| b. State the main components of an electric circuit  | 3 marks |
| c.   |         |
| i. State Ohm's Law   | 4 marks |
| ii. A resistor of $10\ \Omega$ has a current of 2 amperes flowing through it. What is the potential difference (p.d.) across the resistor?   | 4 marks |
|  |         |
| d. Two resistors each of resistance $1\ \Omega$ are connected in a circuit containing a 2 V battery of negligible internal resistance. Calculate the current flowing in the circuit when the resistors are connected |         |
| i. in series   | 3 marks |
| ii. in parallel  | 3 marks |
|  |         |
| 5. a. i. State three differences between aerobic and anaerobic respiration.  | 6 marks |
| ii. State three characteristics of insulators which make them unable to conduct electricity  | 6 marks |
| b. Explain the following terms;  |         |
| i. Paramagnetic substances   | 3 marks |
| ii. Diamagnetic substances   | 3 marks |
|  |         |
| c. i. Four resistors of 4 ohm, 3 ohm and 6 ohm are in series. Calculate effective resistance.  | 3 marks |
| ii. State any two ways by which magnets can be taken care of.  | 4 marks |