STUDENT'S ID NO:_____ SIGNATURE: _____

UNIVERSITY OF GHANA

DEPARTMENT OF TEACHER EDUCATION

SCHOOL OF EDUCATION AND LEADERSHIP

COLLEGES OF EDUCATION

END OF SEMESTER TWO EXAMINATIONS FOR LEVEL 300, 2023/2024

B.ED. PROGRAMME

COURSE CODE: TEUP 306

COURSE TITLE: PREPARING TO TEACH UPPER PRIMARY SCIENCE

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. Which of the following is present in exhaled air?
   a. Oxygen
   b. Carbon dioxide
   c. Nitrogen
   d. Hydrogen

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2. In which part of human beings are the lungs situated?

a. Abdominal cavity

b. Thoracic cavity

c. Diaphragm

d. Stomach

3. The adult mosquito lays eggs, which hatch into

a. Imago

b. Pupa

c. Larva

d. Embryo

4. Which of the following is not a common breeding habitat for mosquito larvae?

a. Clean, stagnant water

b. Ponds

c. Flower vases with fresh water

d. Running streams

5. What do mosquito pupae primarily do in their aquatic environment?

a. Feed on algae

b. Swim and filter-feed

c. Rest and develop into adult

d. Lay eggs

6. Which type of adult mosquito typically feeds on blood?

a. Males

b. Females

c. Both males and females

d. None of them

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7. How do mosquitoes locate their hosts for a blood meal?
   a. By following a specific trail
   b. By using their sense of smell
   c. By sight
   d. By listening to their heartbeat

8. Which part of the digestive system serves as a temporary storage and mixing area for food before it enters the small intestine?
   a. Oesophagus
   b. Stomach
   c. Large intestine
   d. Liver

9. What is the function of the gall bladder in the digestive system?
   a. Production of digestive enzymes
   b. Absorption of nutrients
   c. Storage of bile
   d. Mixing of stomach content

10. What is the role of pancreas in the digestive system?
   a. Production of hydrochloric acid
   b. Production of insulin
   c. Production of mucus
   d. Production of digestive enzymes

11. Heat flows naturally from a point at lower temperature to another point at higher temperature.
   a. False
   b. True

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12. The quantity of heat contained in a body depends on the following except .....

a. type of material

b. The mass of the body

c. The temperature of the body

d. The source of the heat

13. The quantity of heat energy required to raise the temperature of a body by one kelvin is called.....

a. Heat capacity

b. Heat content

c. Specific heat capacity

d. Temperature gradient

14. The SI unit for specific heat capacity is .....

a. J °C^-1^

b. J K^-1^

c. J kg^-1^

d. J kg^-1^ K^-1^

15. Which of the following is not affected by heat application?

a. The mass of a body

b. The state of a body

c. The volume of a body

d. The Water Cycle

16. Magnetic force lines intersect at the point of greatest attraction.

a. False

b. True

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17. The entire region surrounding a magnet where the magnetic force of the magnet is experienced is called.....

a. force line

b. magnetic field

c. magnetic force

d. magnetic pole

18. The best confirmation for the test of a magnet is .....

a. Attraction

b. Ferromagnetism

c. Flux intensity

d. Repulsion

19. Magnetic flux lines are assumed to emerge from a magnet at the ..... and enter the magnet at the .....

20. The process of introducing magnetism in unmagnetised magnetic material by bringing it near to, or in contact with, a permanent magnet is called.....

a. Diamagnetism

b. Magnetic induction

c. Magnetisation

d. Paramagnetism

21. Which of the following is a characteristic of a battery made up of cells connected in parallel?

22. The circuit symbol shown below represents .....

23. The device designed specifically to offer opposition to the flow of electricity is called?

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24. A 6 volt power source sends a current of 2 amperes through a resistor. What is the resistance of the resistor?

25. Two resistors of resistance 2 Ω are connected parallel in a circuit. What will be the effective resistance in this circuit?

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:

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 Ohm's Law [4 marks]

3. a. State four uses of electromagnets [4 marks]

b. Explain the following terms:

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i) Conduction [3 marks]

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 Ω 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 Ω 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. State four differences between inhalation and exhalation. [8 marks]

b. i. Four resistors of 4 ohm, 3 ohm and 6 ohm are series. Calculate effective resistance [3 marks]

ii. Distinguish between Permanent and temporary magnets [4 marks]

c. i. What is magnetisation? [4 marks]

ii. State any three main ways of making a magnet [6 marks]