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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 100, 2022/2023

B.ED. PROGRAMME

COURSE CODE: TEJS 106

COURSE TITLE: INTRODUCTION TO INTEGRATED SCIENCE II

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 an example of passive electronic component?
   A. Diode
   B. Integrated Circuit
   C. Resistor
   D. Transistor

2. A form of energy that can be stored for future use is called _____
   A. Gravitational energy
   B. Kinetic energy

C. Light energy
D. Potential energy

3. Which of the following electronic components is used to amplify or switch electronic signals and electrical power?
   A. Capacitor
   B. Diode
   C. Resistor
   D. Transistor

4. The one thing that is common to all fossil fuels is that they _____
   A. contain carbon
   B. have undergone the same set of geological processes during their formation
   C. represent the remains of one living
   D. were originally formed in the marine environment

5. The kind of energy found in the food we eat is referred to us _____
   A. Biodegradable energy
   B. Chemical energy
   C. Electrical energy
   D. Thermal energy

6. Electrical machines that help in domestic function such as cooking, cleaning and food preservation is _____
   A. Hospital appliances
   B. Household appliances
   C. Laboratory appliances
   D. Work appliances

7. A good science teaching philosophy must have the following **except** _____
   A. The teacher's goal
   B. What to teach
   C. What is teaching
   D. What is trending in the school

8. Typhoid is a disease caused by _____
   A. Bacteria
   B. Fungi
   C. Virus
   D. Worm

9. All the following are infectious diseases **except** _____
   A. Anorexia
   B. Cholera
   C. Malaria
   D. Pneumonia

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10. Which of the following is a household electronic appliance?
    A. Test tube rack.
    B. Dishwasher.
    C. Micrometer screw gauge.
    D. Mass spectrometer.

11. Which of the following is not a renewable source of energy?
    A. Biomass
    B. Hydro power
    C. Natural gas
    D. Solar energy

12. The ABC of first aid is a list of important things first aiders must check when dealing with a patient. What does this acronym stand for?
    A. Airway, Breastfeeding and Circulation
    B. Airway, Breathing and Circumventing
    C. Airway, Breathing and Circulation
    D. Airway, Breathing and Circuit

13. When someone is unconscious, to provide first aid, a first aider must _____
    A. immediately give the person oxygen
    B. rush the victim to hospital.
    C. force spoon into the victim's mouth
    D. call an ambulance and perform CPR.

14. At what stage do we teach human and the environment in basic school?
    A. Basic 1, 2, 5 and 6
    B. Basic 1, 3, 5 and 6
    C. Basic 2, 3, 4, 5 and 6
    D. Basic 1, 2, 3, 4, 5 and 6

15. Coal is formed from one of the following _____
    A. Dead remains of marine organisms
    B. Remains of plants in swampy areas
    C. Sand and silt
    D. Sea

16. A material that has extremely high electrical resistance is known as _____
    A. A para-conductor
    B. A resistor
    C. An insulator
    D. Semiconductor

17. Which of the following is not an electronic appliance?
    A. Computers TV set

B. Laptop
C. Transformer
D. TV set

18. A collection of meaning or purposeful work or artefacts done by a teacher is known as a _____
    A. Student's portfolio
    B. Student teacher's portfolio
    C. Subject portfolio
    D. Teaching portfolio

19. A statement of one's beliefs, values and practices about teaching and learning and how they are implemented is referred to as _____
    A. Perceptibility of teaching
    B. Subject portfolio
    C. Teaching philosophy
    D. Teaching portfolio

20. As a primary three science teacher, you directed your pupils to prepare a checklist of household electronic devices and present in groups of five. Which two basic scientific skills will be developed by your pupils?
    A. Collaboration and Communication
    B. Collaboration and Observation
    C. Observation and Communication
    D. Creativity and Collaboration

21. What is CPR in first aid procedure?
    A. Cardiac Pathway Respiration
    B. Cardiovascular Pulmonary Respiration
    C. Cardio Pulmonary Resuscitation
    D. Chest Pressure Readjustment

22. What is the function of AED?
    A. To perform chest compression to help the heart reestablish an effective rhythm.
    B. To give rescue breaths to help the heart reestablish an effective rhythm.
    C. To give electrical shock to help the heart reestablish an effective rhythm.
    D. To give blood to help the heart reestablish an effective rhythm.

23. The statement "energy can be created and destroyed" violates which of the following?
    A. The law of definite proportion
    B. The law of conservation of energy
    C. The law of multiple proportion
    D. Faraday's first law of electrolysis

24. The energy conversion that takes place when a television set is switched on is _____
    A. Chemical to light energy.

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B. Electrical to light + sound + heat energy.
C. Electrical to heat energy.
D. Mechanical to potential + sound energy.

25. All the following scientific processes are involved in the production of ethanol from sugarcane **except** _____
A. Fermentation
B. Distillation
C. Condensation
D. Polymerization

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SECTION B

[75 Marks]

Answer any **three** questions in this section.

1. a. Explain each of the following:
   - i) Zoonotic disease
   - ii) Incubation period of a disease
   - iii) Passive carrier
   - iv) Active carrier
   - v) Asymptomatic carrier [10 marks]

   b. What is the major difference between an electrical and an electronic device? [3marks]

   c. State three benefits of a forest reserve. [3 marks]

   d. How will you guide a Basic Learner to differentiate between renewable natural resources from non-renewable natural resources? [9 marks]

2. a. State five things a science teacher must do before stepping into the classroom to teach (Pre-Delivery Stage) [5 marks]

   b. State and explain three (3) positive contributions of science and technology to Agriculture. [6 marks]

   c. State five features of an effective teaching portfolio and explain each. [10 marks]

   d. Mention four (4) non-renewable natural resources [4 marks]

3. a. State three importance of maintaining science teaching portfolio as a trainee teacher. [6 marks]

   b. i. Differentiate between primary and secondary surveys regarding first aid administration. [4 marks]

   ii. Distinguish between passive and active electronic. [4 marks]

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c. How will you guide a Basic 7 pupil to differentiate between electrical and electronic devices? [9 marks]

d. Mention two (2) aims of first aid. [2 marks]

4. a. i. What is energy conservation? [2 marks]

ii. Mention five ways one can conserve energy in the home. [5 marks]

b. Amponsah lifts a body of mass 227kg to a height of 9m. Determine the potential energy exerted on the body. [$g=10ms^{-2}$]. [6 marks]

c. How will you assist a JHS 1 pupil to understand personal body care? [7 marks]

d. Mention four content of the science teaching portfolio. [4 marks]

5. a. i. What is first aid? [2 marks]

ii. Outline two aims of first aid. [3 marks]

iii. List four items which are found in a first aid box. [2 marks]

b. Give the energy conversions that take place when

i. You light a candle. [3 marks]

ii. Switch on electric stove. [3 marks]

c. As a basic 5 teacher, how will you help your learners to differentiate between kinetic and potential energy? [7 marks]

d. i. Explain disease. [2 marks]

ii. Mention three (3) non-infectious diseases [3 marks]