UNIVERSITY OF EDUCATION, WINNEBA
INSTITUTE FOR TEACHER EDUCATION AND CONTINUING PROFESSIONAL DEVELOPMENT (ITECPD)

END OF FIRST SEMESTER EXAMINATIONS, APRIL, 2024

LEVEL 300
COURSE CODE: JBI 352
COURSE TITLE: PREPARING TO TEACH JHS SCIENCE

TIME ALLOWED: 2 HRS

STUDENT'S INDEX NUMBER: _____

GENERAL INSTRUCTIONS:

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- This paper is made up of ONE SECTION.
- *The Section is made up of five essay type questions.*
- *Answer any THREE questions in your answer booklet.*
- *Each question carries equal marks. You are expected to start each question on a new page.*
- *You are expected to hand over your answer booklet to the invigilator before you leave the examination hall.*

Instruction: ***Answer any three (3) questions in the answer booklet provided.***

1. a) Explain the following concepts:
   (i) Absorption
   (ii) Assimilation
   (iii) Emulsification **6 marks**

b) In the test for a particular food substance, a student-teacher went through the following steps below. Use the steps to answer the questions that follow;

Step	Activity and Observation
1	Crush the food substance and add 1cm^3 of water to it
2	1cm^3 of Benedict solution was added but the blue colour of the Benedict solution remained.
3	1cm^3 of dilute Hydrochloric acid was added and heated in boiling water for about three minutes

4	The solution was cooled and Sodium hydrogencarbonate was added until fizzing stopped
5	$2cm^3$ of Benedict solution was added and heated for five minutes and an orange-red ppt was observed.

(i) Give the reason for the difference in results obtained in steps 2 and 5 respectively. **2 marks**

(ii) State the specific reason for the addition of named substances in steps 2, 3, and 4 respectively. **3 marks**

(iii) In step 3, the student-teacher decided to add saliva instead of hydrochloric acid. Why do you think he wanted to do that, and state the implication of that to the activity in step 4. **4 marks**

(iv) Identify any other reagent that can be used in place of the one used in steps 2 and 4. **1 mark**

c) Your mentor used demonstration method instead of activity method in teaching learners of a basic school science. Discuss **two (2)** conditions that will require your mentor to use demonstration method. **4 marks**

2. a) Explain the following as used in a lesson plan:

(i) Content Standard

(ii) Learning Indicator

(iii) Exemplar **6 marks**

b) **Three** colourless solutions labelled A, B and C whose pH values are respectively 8.4, 2 and 7 are placed on a bench in the lab. How would you assist Basic 7 learners to identify which of them is an acidic solution, alkaline solution and a neutral solution **6 marks**

c) Discuss **four (4)** merits of teaching science to cognitively improve their understanding of scientific concepts at the Basic level. **8 marks**

3. a) Discuss **two (2)** major function of gametes in reproduction in humans. **4 marks**

b) Describe the scientific method you will use to make water from a dam safe for drinking. **14 marks**

c) Explain Scheme of Learning. **2 marks**

4. a) Discuss the **three (3)** phases of the lesson plan. **6 marks**

b) Outline all the core competencies specified in the curriculum. **6 marks**

c) Describe how you will teach the concept of Acids to JHS 1 learners. **8 marks**

5 a) Discuss **three (3)** criteria that must be considered for selecting curriculum content for a lesson. **6 marks**

b) Describe how you will assist JHS 1 learners to test for protein. **8 marks**

c) Explain the following process skills:

(i) Planning
(ii) Observing
(iii) Classifying **6 marks**