

# **BIOLOGY III**

**013**

**30/07/ 2021 08.30 AM – 10:00 AM**



## **ADVANCED LEVEL NATIONAL EXAMINATIONS, 2020-2021**

**SUBJECT: BIOLOGY III**

**PRACTICAL EXAM**

**DURATION: 1 Hour 30 minutes**

**Marks:**

<b>/30</b>
------------

### **COMBINATIONS:**

- **BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)**
- **MATHEMATICS-CHEMISTRY-BIOLOGY (MCB)**
- **PHYSICS-CHEMISTRY-BIOLOGY (MCB)**

### **INSTRUCTIONS:**

- 1) Write your names and index number on the answer booklet cover in the space provided as written on your registration form and DO NOT write your names and index number on additional answer sheets of paper if provided.
- 2) Do not open this question paper until you are told to do so.
- 3) All answers should be written in the answer booklets provided.

4) Use **blue** or **black** pen.

**All questions are compulsory (20 Marks)**

1) You are provided with solution B. You are required to establish the food substances in solution B.

a) Carry out the following tests and record the observations and deductions in the table below. **(10 marks)**

<b>Tests</b>	<b>Observations</b>	<b>Deductions (conclusions)</b>
(i) To 2cm <sup>3</sup> of solution B in a test tube, add 2 drops of Iodine solution.		
(ii) To 2cm <sup>3</sup> of solution B, add equal volume of Benedict's solution and boil.		
(iii) To 2cm <sup>3</sup> of solution B, add 4 drops of NaOH, shake, add 2 drops of CuSO <sub>4</sub> and shake.		
(iv) To 2cm <sup>3</sup> of solution B, add 4 drops of ethanol and shake.		
(v) To 3 drops of DCPIP, add solution B dropwise until excess.		

(b) (i) From the tests carried out in the table above, list the food substances in solution B. **(2 marks)**

(ii) What is the significance of (NaOH) in the table above? **(1 mark)**

c) (i) Explain the observation of the following tests in the table above.

Test (ii) .....

.....

**(2 marks)**

Test (v) .....

.....

**(2 marks)**

2) You are provided with solution X. You are required to establish the food substances in Solution X.

a) Carry out the following tests and record the observations and deductions in the table below. **(10 marks)**

<b>Tests</b>	<b>Observations</b>	<b>Deductions (conclusions)</b>
(i) To 2cm <sup>3</sup> of solution X in a test tube, add 2 drops of Iodine solution.		
(ii) To 2cm <sup>3</sup> of solution X, add equal volume of Benedict's solution and boil.		
(iii) To 2cm <sup>3</sup> of solution X, add 4 drops of NaOH, shake, add 2 drops of CuSO <sub>4</sub> and shake.		
(iv) To 2cm <sup>3</sup> of solution X, add 4 drops of ethanol and shake.		
(v) To 3 drops of DCPIP, add solution X dropwise until excess.		

(b) (i) Name the food substances in Solution X. **(2 marks)**

(ii) Give the significance of food substances in Solution X. **(1 mark)**