**Name ……………………………..………...…………. Index No……………………….….………….**

**School ………………………………………………... Candidate’s Signature ……………………… Date ………………...........................………..**

**231/3**

**BIOLOGY**

**PAPER 3**

**(PRACTICAL)**

**TIME: 13/4 HOURS**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name and index number in the spaces provided
2. Answer **ALL** the questions in spaces provided in this question paper.
3. You are required to spend the first 15 minutes of the 1 hours allowed for this paper reading the whole paper carefully before commencing your work.
4. Additional pages must not be inserted.

**FOR EXAMINER’S USE ONLY**

|  |  |  |
| --- | --- | --- |
| **Question** | **Max. Score** | **Candidate’s score** |
| **1** | 15 |  |
| **2** | 13 |  |
| **3** | 12 |  |
| **40****TOTAL SCORE**  |  |

***This paper consists of 5 printed pages.***

***Candidates should check to ensure that all pages are printed as indicated and no questions are missing.***

1. a) You are provided with solution X, Y and Z. Using some of solution X, carry out food tests shown in the table below. (6 marks)

|  |  |  |  |
| --- | --- | --- | --- |
| Food substance | Procedure  | Observations  | Deductions  |
| Starch |  |  |  |
| Reducing sugar |  |  |  |

b) Divide the remaining solution X into three equal parts using a measuring cylinder and transfer separately each into test-tubes labelled 1, 2 and 3.

1. Into test tube 1, add 1cm3 of solution Y and 4cm3 of solution Z.
2. Into test tube 2, add 1cm3 of solution Y and boil for 5 minutes.
3. In test-tube 3, add 1cm3 of solution Y.

Leave the set-up for 40 minutes and carry out food tests in each test tube. Record your observations in the table below. (3 marks)

|  |  |
| --- | --- |
|  | Observations |
| Test tube | Starch | Reducing sugar |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |

c) Account for the results in test tube;

1. 2 (2 marks)

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1. 3 (2 marks)

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d) What was the effect of solution Z on solution X? (1 mark)

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e) State **one** part in human body where the process under investigation may take place. (1 mark)

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1. You are provided with four bones taken from a mammal labelled A, B, C and D. Study them carefully and answer the questions below.



 **Y**

 **Z**

**W**

**X**

**Specimen D**

**Specimen C**

**Specimen B**

**Specimen A**

1. Identify specimens labelled A, B and C. (3 marks)

A………………………………………………………….…………

B………………………………………………………….…………

C………………………………………………………….…………

1. Name parts of bone C labelled W, X and Y. (3marks)

W………………………………………………………….…………

X………………………………………………………….…………

Y………………………………………………………….…………

1. Name the type of joint found between points of articulation on bone B at the posterior and anterior ends with other bones. (2 marks)

Anterior end

……………………………………………………………….………………………………………..

Posterior end

……………………………………………………………….………………………………………..

1. Identify the parts of skeleton from where specimen B and D were obtained. (2 marks)

B………………………………………………………….…………

D………………………………………………………….…………

1. State **three** structural adaptations of specimen D to its functions. (3 marks)

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1. Below are photographs of specimens from plants. Study them and answer the questions that follow.

**A**

**R**



**C**

**D**

**B**

**Q**

1. What is the role of the specimens to the plants? (1 mark)

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1. Differentiate the specimen Q from specimen R. (2 marks)

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1. Name the parts labelled A, B and C. (3 marks)

A………………………………………………………

B………………………………………………………

C………………………………………………………

1. Explain what happens to the floral structures after fertilization. (4 marks)

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1. With a reason, state the class of plants from which the specimens were obtained.

Class (1 mark)

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Reason (1 mark)

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