**Name………………………………………………… Adm no. ……………Class…….**

**School ………………………………………………...**

**231/3**

**BIOLOGY**

**PAPER 3 (PRACTICAL)**

**Sept 2021**

**Time: 1 ¾ HOURS**

***KASSU JET EXAMINATION -2021***

**231/3**

**BIOLOGY PAPER 3 (PRACTICAL**)

**Time: 1 ¾ HOURS**

**Sept 2021**

**INSTRUCTIONS TO CANDIDATES**

* Answer ALL the questions.
* You are required to spend the first 15 minutes of 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
* Answers must be written in the spaces provided in the question paper.
* Additional pages must not be inserted.

**FOR EXAMINERS USE ONLY**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum score** | **Candidate’s score** |
| **1** | **12** |  |
| **2** | **14** |  |
| **3** | **14** |  |
| **Total Score** | ***40******Marks*** |  |

*This paper consists of 5 printed pages.Candidates should check the question paper to ensure that all pages are printed as indicatedand no questions are missing*

1. You are provided with the photomicrograph of an onion outer epidermis as seen under light microscope



a) On the photograph, name parts labelled A, C, and D **(3mark)** A ……………………………………………………………

C ……………………………………………………………

D ……………………………………………………………

1. Explain how the part **labelled B** is adapted to its function **(2marks)**

………………………………………………………………………………………………………………………………………………………………………………………………

1. Calculate the actual size of the cell **marked K**, give your answer in micrometres

**(2marks)**

1. The differences between the cells in the photograph and those obtained from an animal epithelial cells **(3marks)**

|  |  |
| --- | --- |
| Onion epidermal cells | Animal epithelial cells |
|  |  |
|  |  |
|  |  |

1. State the process that make the structures in the cell above appear more distinct

 **(1mark)**

………………………………………………………………………………………..

1. In microscopic procedure in 1 (d) above name what was used to achieve the process

 **(1mark)**

……………………………………………………………………………………………

1. The photographs below represent specimen labeled A, B, C and D

|  |  |
| --- | --- |
| **SPECIMEN A** | **SPECIMEN B** |
| Tamarillo Stock Video Footage - 4K and HD Video Clips | Shutterstock | Apple cross-section isolated on white background Royalty Free Stock Images  | Apple, Apple photo, Fruit |
| **SPECIMEN C** | **SPECIMEN D** |
| Passion Fruit Free Stock Photo - Public Domain Pictures | https://i.pinimg.com/564x/6c/82/a3/6c82a3870159bd5df74da76f96870161.jpg |

1. Name the type of placentation shown in specimen A and B **(2 marks)**

**A**…………………………………………………………………………...……

**B**…………………………………………………………..………………….…

1. Identify the type of sections from which specimen **C** and D was obtained?

 **(2 marks)**

**C**……………………………………………………………………………...…

**D**…………………………………………………………..………………….…

1. Classify the above specimen labeled D  **(1mark)**

 ………………………………………………………………………………

1. You are provided with specimen labeled **D1, D2, D3** and **D4**. Examine them

Draw and label specimen labeled **D2** **(3marks)**

1. Giving a reason and state the agent of dispersal of the specimen **(6marks)**

|  |  |  |
| --- | --- | --- |
| **Specimen**  | **Agent of dispersal**  | **Reason**  |
| D1 |  |  |
| D3 |  |  |
| D4 |  |  |

1. You are provided with the following. Solution **P**, **Q** and **Z**.
2. (i) Put 2 cm3 of solution **P** into two test tubes labeled **A** and **B**. Add iodine solution drops into test tube **A**. Observe and record. **(1 mark)**

…………………………………………………………………………………………..

(ii)To test tube **B**, add an equal amount of Benedict’s solution. Heat to boil. Record your observation. **(1 mark)**

…………………………………………………………………………………………..

(iii) From the results in (a) (i) and (ii), identify solution **P**. **(1 mark)**

…………………………………………………………………………………………..

(iv). Put 2cm3 of solution **Z** into a clean test tube labelled **C**. Add equal volume of Benedict’s solution. Heat to boil. **(1 mark)**

……………………………………………………………………………………..……

(v) Open the visking tubing provided, Pour solution **P** into the visking tubing and add 1cm3 of the solution **R**. Tie the visking tubing and ensure there is no leakage. Pour solution **Z** into a clean beaker till it is half full. Immerse visking tube in the solution **Z** in the beaker. Allow it to stand for 30 minutes. After 30 minutes, take 2cm3 of solution **Z** from the beaker into a clean test tube labelled **D**. Add equal amount of Benedict’s solution. Heat to boil. Record your observation.  **(1 mark)**

…………………………………………………………………………………………..

(vi)Account for the observation made in (v) above.  **(3 marks)**

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

1. i) Pour 2 cm3 of solution **Q** into a clean test tube. Observe and record the color of solution **Q.** **(1 mark)**

…………………………………………………………………………………………

ii) Add 1 cm3 of sodium hydroxide into test tube containing solution **Q**. Record your observation. **(1 mark)**

……………………………………………………………..……………………………

iii) Explain the results observed in (b)(ii) above. **(2 marks)**

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

iv). what is the identity of solution **R? (1 mark)**

……………………………………………………………..……………………………v) State **one** factor that can affect the process demonstrated in 3a **(v**) above **(1 mark)**

……………………………………………………………..……………………………