**NAME………………………………………………………………………….**

**ADM NO………………………………………………………………………..**

**SCHOOL……………………………………………………………………….**

**STUDENT’S SIGN…………………………………………………………….**

**DATE……………………………………………………………………………**

**231/3**

**BIOLOGY**

**PAPER 3**

**FORM 4**

**JULY/AUG 2019**

**1 ¾ Hours**

**INSTRUCTIONS TO CANDIDATES**

* Write your **Name** and your **Admission**  number in the spaces provided at the top of this page
* Sign and write the date of examination
* Answer all questions
* You are required to spend the first 15 minutes of 1 ¾ hrs 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** | **Max Score** | **Candidate Score** |
| 1 | 14 |  |
| 2 | 13 |  |
| 3 | 13 |  |
| TOTAL | 40 |  |

1. You are provided with solution A1,A2 and A3. A2 and A3 are the same except that A3 has been boiled. Label three test tubes B,C and D
* Into the test tube labeled B add 1ml of solution A1
* Into test tube labeled C,add 1ml of A1 and 1ml of A3
* Into test tube labeled D, add 1ml of A1 and 1ml of A3.
1. Withdraw a drop from test –tube B and place it on a white tile. To the drop add one drop of iodinesolution. Record your observation in the table (a) below.
* Repeat the procedure with contents in test tubes C and D and record your observation in tables (a) below
* Place the three test tubes labeled B,C and D into a water bath does not fall below 35oc or exceed 38oc .
* After 30 minutes, test the contents of each of the test tubes labeled B,C and D following the procedure in (a) above. Record your observations in the table (b) below.

Table a

|  |  |  |
| --- | --- | --- |
| Test tube | Observation  | Conclusion  |
| B |  |  |
| C |  |  |
| D |  |  |

(3mks)

Table b

|  |  |  |
| --- | --- | --- |
| Test tube | observation | Conclusion |
| B |  |  |
| C |  |  |
| D |  |  |

1. Why was the test tube labeled B included in the experiment (1mk)

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1. (i) Suggest the identify of solution A2 (1mk)

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(ii) Give a reason for your answer in (c) (i) above (1mk)

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Suggest a part of the alimentary canal in the body of a mammal where the process being investigated in this experiment would take place (1mk)

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1. Account for results at the end of the experiment in test tube labeled (4mks)
2. B

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1. C

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1. The diagram below shows a pair of mammalian organs with their blood supply. One of the organs has been sectioned longitudinally. Examine them keenly

1. Identify the pair if organs (1mk)

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1. State the two main function of the organs (2mks)

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1. Name the blood vessel **M** and **Q** (2mks)

M………………………………………………………………………………………………………………………………………………….

Q…………………………………………………………………………………………………………………………………………………..

1. Which part of the nephron is found in region **S** and **T** (2mks)

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1. State the function of the structure labeled **W** and **R** (2mks)

 W ……………………………………………………………………………………………………………………………………………………………

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R………………………………………………………………………………………………………………………………………………………….

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1. If the actual length (x-z) of the unsectioned organ is 9cm, calculate the magnification of the drawing (3mks)

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1. Give a reason why blood vessel P carries blood with higher concentration of urea than vessel Q (1mk)

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1. Below are diagrams of two seedling labeled **K** and **L**.Examine them
2. Give that the two plants belongs to the same class, name the class and give a reason based on observable features on any of the two seedlings or both (2mks)

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1. Giving reasons, state the type of germination that occurs in each of the two seedlings (4mks)

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1. Name the part labeled **H** and **G** on the seedling (2mks)

H…………………………………………………………………………………………………………………………………………………..

G…………………………………………………………………………………………………………………………………………………

1. As germination progresses, both seedling straightens. Explain how this occurs (4mks)

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1. Name the type of rooting system that will develop in the two seedlings (1mk)

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