**NAME:……………………………………………………… INDEX NO:……………………**

**SCHOOL:………………………………………………….. DATE: ...................................... SIGN:…………………**

**231/3**

**BIOLOGY PRACTICAL**

PAPER 3

March/ April 2016

Time: 1 ¾ Hours

**ELERAI PRE – MOCK EXAMINATIONS - 2016**

***Kenya Certificate of Secondary Education (K.C.S.E)***

**BIOLOGY PAPER 3 (Practical)**

**1 ¾ HRS**

## INSTRUCTIONS TO CANDIDATES

* *Answer all the questions in the spaces provided.*
* *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.*
* *Candidates may be penalized for recording irrelevant information and for incorrect spelling especially of technical terms.*

**FOR EXAMINER’S USE ONLY**

|  |  |  |
| --- | --- | --- |
| **Question** | **Max Score** | **Candidate’s Score** |
| **1** | **16** |  |
| **2** | **13** |  |
| **3** | **11** |  |
| **TOTAL** | **40** |  |

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

1. Use the photographs provided to answer the questions that follow:





a) (i) Identify the type of cell division represented in the photographs **A** and **B**. (2mks)

A ………………………………………………………………………………………………….

B …………………………………………………………………………………………………

 (ii) With a reason, name the stage of cell division represented in each case. (4mks)

A …………………………………………………………………………………………………

Reason ………………………………………………………………………………………….......

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

B ……………………………………………………………………………………………………

Reason …………………………………………………………………………………………

………………………………………………………………………………………………

 (iii) Name the parts of human body where the process **B** represented above occur. (2mks)

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

b) (i) What type of fruit is represented by photograph **I**? Give two reasons. (3mks)

Type ………………………………………………………………………………………………

Reasons……………………………………………………………………………………………

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

 (ii) Name the agent of dispersal for fruits **II** and **III**. (2mk)

II ……………………………………………………………………………………………………

III …………………………………………………………………………………………………

 (iii) How are the fruits adapted for the mode of dispersal stated in (b)( ii) above? (2mk)

II ……………………………………………………………………………………………………

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III …………………………………………………………………………………………………

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(iv) Identify the type of placentation shown by photograph **I**. (1mk)

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1. **You are provided with the following:**
* Solution labelled **A**
* Benedict’s solution labelled solution **B**
* Solution **C**
* 0.1% NaCl solution
* 1.4% / NaCl solution
* Iodine solution labelled solution **E**

Label three test tubes, **P, Q** and **R**. Into each test-tube, place 3ml of the solution **C**

1. Put a drop of solution from **P** on a white tile and add a drop of iodine (solution **E**)

Repeat the procedure for each test tube **Q** and **R**.

Record your observations in the table below. (3mks)

|  |  |
| --- | --- |
| **Test-tube** | **Observation** |
| **P** |  |
| **Q** |  |
| **R** |  |

1. To test tube **Q** add 3 drops of 0.1% sodium chloride solution and 2ml of solution **A**. To test tube **R**,add three drops of 1.4% sodium chloride solution and 2ml of solution **A**. Place the test tube **P**,**Q** and **R** in a water bath and maintain at 370C for 30 minutes. Using a drop of the solution from each test tube, repeat the procedure in (a) above and spare the rest for next question. Record your observations in the table below. (3mks)

|  |  |
| --- | --- |
| **Test-tube** | **Observation at the end of experiment** |
| **P** |  |
| **Q** |  |
| **R** |  |

(c) Put 2cm3 of solution from test tube **P** in a clean test tube and add 2cm3 of Benedict’s(solution **B**)shake then heat the mixture to boil in a hot water bath.

 Record your final observations in the table below.

 Repeat the procedure for solution **Q** and **R**. (3mks)

|  |  |
| --- | --- |
| **Test-tube** | **Observation after experiment** |
| **P** |  |
| **Q** |  |
| **R** |  |

 (d) Why was the test tube **P** included in the experiment? (1mk)

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

1. Account for observations made in test tube **Q** and **R** at the end of the experiment.

(i) Test tube **Q**  (2mks)

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1. Test tube **R**

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1. Suggest the identity of solution **A**. (1mk)

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1. The photomicrograph below is of a blood smear. Examine it.



1. Identify the blood components labeled X, Y and Z (3mks)

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1. State the functions of X and Y (2mks)

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1. Name the mineral ion and vitamin required in the process brought about by the components labeled X (2mks)

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1. State a feature which is observable in the photograph, that adapts the components labeled Z to their functions (1mk)

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1. (i) Measure the diameter marked by the black line on the cell at the right hand corner of the photomicrograph in centimetres (1mk)

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(ii) Calculate the actual diameter of the cell in micrometers(um) (2mks)

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