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

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

**Date: …….………………………………………..**

**231/3**

**BIOLOGY**

**PAPER 3(PRACTICAL)**

**TIME: 2 HOUR**

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

**Biology**

**Paper 3**

**(Practical)**

**Time: 13/4 Hours**

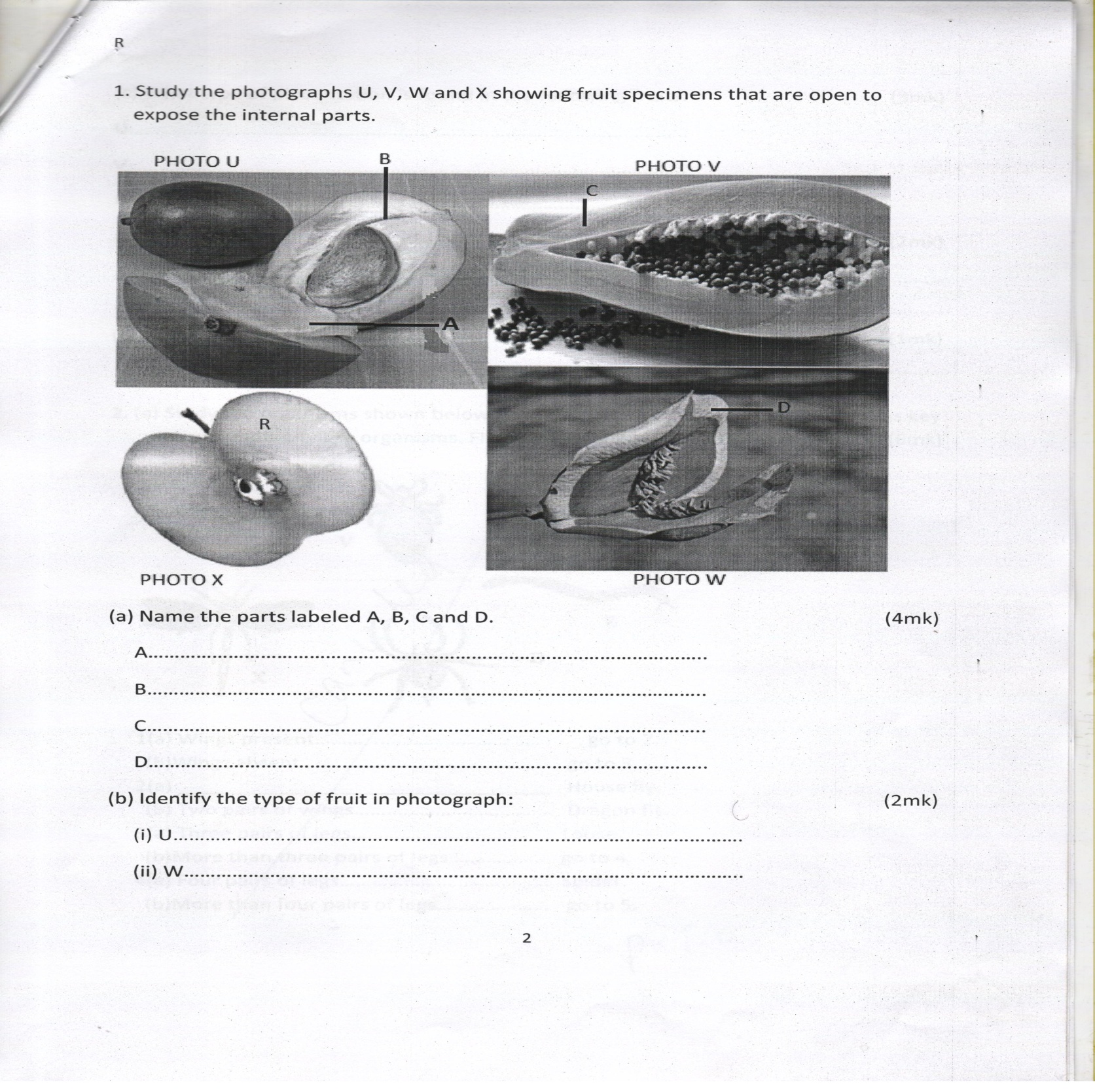
**INSTRUCTIONS TO CANDIDATES**

* *Write your* ***name, Admission******number*** *and name of your school in the spaces provided above*
* ***Sign*** *and write the* ***date*** *of examination in the spaces provided.*
* *This paper consists of three questions*
* *Answer* ***all*** *the questions in the spaces provided.*
* ***This paper consists of 4 printed pages.***
* ***Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.***

**For Examiners Use Only**

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

1.Study the photographs **U, V, W** and **X** showing fruit specimens that are open to expose the interna partsl.



1. Name the parts labeled **A, B, C** and **D**  (4marks)

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

B…………………………………………………………………………….…………………………….

C………………………………………………………………………………………….……………….  
D……………………………………………………………………………..……………………………

1. Identify the type of fruit in photograph: (2marks)
2. U……….………………………………………………………………………………………….
3. W………..………………………………………………………………………………………...
4. What type of placentation is found in the following fruits: (3mks)

U……………………………………………..……………………………………………………..……..

V…………………………………………………………………………………………………………..

W…………………………………………………………………………………………………….…….

1. How is the specimen in photograph W adapted to its functions? (2marks)

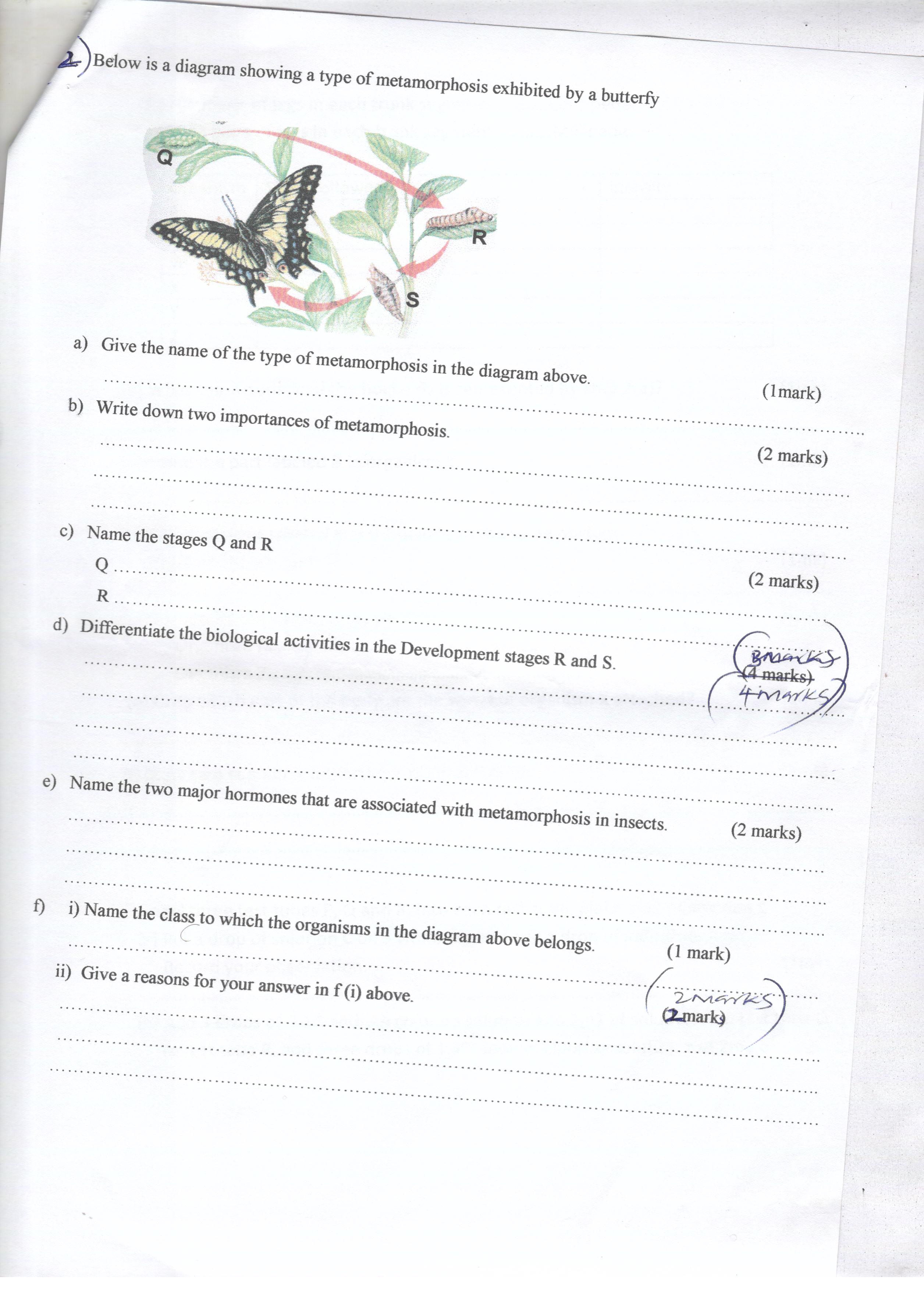
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1. Which part of a flower develops into the region labeled **R** in the photograph **X** (1mark)

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2. Below is a diagram showing a type of metamorphosis exhibited by a butterfly



1. Give the name of the type of metamorphosis in the diagram above. (1mark)

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1. Write down two importance of metamorphosis. (2marks)

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1. Name stages **Q** and **R** (2mks)

Q……………………………………………………………………………………………………………

R……………………………………………………………………………………………………………

1. Differentiate the biological activities in the development stages **R** and **S**. (4marks)

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1. Name the two major hormones that are associated with metamorphosis in insects. (2marks)

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1. (i) Name the class to which the organisms in the diagram above belongs. (1mark)

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(ii)Give a reason for your answer in f (i) above. (2marks)

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

a) Put a drop of solution C on a white tile and add a drop of iodine solution.

Record your observation. (1mark)

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b) Add 3 drops of 0.1%sodium chloride solution and 2ml of solution **A** to test tube **Q**.

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

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

c) (i) Put 2cm3 of solution from test-tube P in a clean test tube and add 2cm3 of Benedict solution, shake then heat the mixture to boil. Record your final observations in the table below. Repeat the procedure for solution **Q** and **R**. (3marks)

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

(ii) Account for your results in test-tubes **Q** and **R**. (4marks)

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d) Why was the test-tube P included in the experiment? (1mark)

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e) Suggest the identity of solution (1mark)

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f) Why was the water bath maintained at 370C (1mark)

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