STAREHE GIRLS CENTRE

MOCK EXAMINATION

**Name:**................................................................**IndexNo…………..**..Class…… **Candidate’s Signature**: ……………................**Date**: ................................................

**231/3**

**BIOLOGY PRACTICAL**

**JULY 2015**

**Time: 13/4 hours**

**INSTRUCTIONS TO CANDIDATES:**

* *Write your* ***name*** *and* ***index number*** *and* ***Class*** *in the spaces provided above.*
* *Sign and write* ***date*** *of examination and sign in the spaces provided above*
* *Answer* ***all*** *the questions*
* *You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully.*

**FOR EXAMINER’S USE ONLY:**

|  |  |  |
| --- | --- | --- |
| **QUESTIONS** | **MAXIMUM SCORE** | **CANDIDATES SCORE** |
| 1 | 15 |  |
| 2 | 13 |  |
| 3 | 12 |  |
| **TOTAL** | **40** |  |

***This paper consists of 8 printed pages. Candidates should check to ascertain that all papers are printed as indicated and that no questions are missing***

1.You are provided with liquid **X** and substance **Q**

(a) Place three drops of liquid **X** onto a white tile. Add four drops of iodine solution and record your observation. (lmk)

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(b) Pour 2ml of liquid **X** into a test-tube. Add equal amounts of Benedict’s solution boil the mixture Record your observation. (lmk)

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(c) Label three boiling tubes as set-ups **A**, **B,** and **C**. Place 3ml of liquid X into each of the set-ups.

Divide substance **Q** into three equal portions.

* + - To set-up **A**, add one portion of substance **Q** and shake.

Place the second portion of substance **Q** into a test tube **B**. Add 1ml of water to it, shake the mixture and boil for four minutes..

* + - To set —up **C**, add the third portion of substance **Q**. Add 8 drops of 2M

hydrochloric acid and shake.

Place the three set-ups in a warm water bath maintained at 37°C for 30 minutes.

Cool the set-ups by dipping the boiling tubes in cold water

Place 2ml of the contents of each set-up into three separate test tubes. Add equal amount of Benedict’s solution to each of the three test-tubes and boil.

Record your observations.

Set-up **A** (1mk)

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Set-up **B**  (1mk)

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Set-up **C** (1mk)

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(d) Account for your observations in each of the set-ups above.

 Set-up **A** (2mks)

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 Set-up **B** (2mks)

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 Set-up **C** (2mks)

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(e) Give the most likely identity of substance **Q.** (1mk)

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f) Why was the water bath maintained at 37oC (1 marks)

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g) What is the fate of the product of set up A in an organism? (1mark)

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h) Name a part in a seed where the process you have named in (g) above occurs. (1mark)

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2.You are provided with a photograph of a chloroplast and animal cell as seen under the

electron microscope. Examine them and use them to answer the questions that follow.

W

Y

B

A

X

C

Z

D

Plasma membrane

Chloroplast from a plant cell

Nucleussssss

Nuclear membrane

Chromosomes

Name the organelles labeled A,B,C and D (4mks)

**A** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**B** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**C** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **D** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) State the functions of the structures labeled **W**, **X**, **Y** and **Z**. (4mks)

**W** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**X** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Y** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Z** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) In the photograph, label the following structures: (2mks)

 (i) Vacuole.

 (ii) Pinocytic vesicle.

 (d) Relate the structure of the organelle labeled **C** to its function. (1mk)

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(e) State the functions of the structure labeled **D**. (2mks)

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3. Examine the photographs below and answer the questions that follow

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a) Specimen R was obtained from fruit development of a tomato fruit

 i) Name the parts labeled A,B,C,D,E (5 marks)

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

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

C…………………………………………........................................…

D…………………………………………..................................…….

E………………………………………….................................…….

ii) State the type of fruit represented by E. (1 mark)

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 iii) Give reason for your answer in (ii) above. (1 mark)

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b) State the type of placentation shown by the specimen S and T. (1 marks)

S…………………………………................................................…………….......................……

T……………………………………………................................................……........................….

c) i) State the agent of dispersal of specimen T and E (1 marks)

T……………………………………………...........................................………........................…

E…………………………………………......................................................................………….

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

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d) List two observation differences between specimen E and T. (2 marks)

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BIO P3 SET 3 MARKING SCHEME

1. 1

a) Blue black/black colour✓1 is formed

b) Colour of Benedict’s solution remains✓1

c) Set up A -Colour changes from ✓1 blue to green to yellow

 Set up B- Colour of Benedicts remains✓ (reject no change)

 Set up C-Colour of Benedicts ✓1 is retained

d) Set up A-Enzyme amylase/diastase✓invertasehydrolyse✓ starch to reducing sugar.

 Set up B- Boiling denatures/destroy enzymes hence starch is not ✓ converted to reducing sugar

 Set up C- HCl provides ✓unfavourable pH for enzyme Amylase, hence ✓1 starch not converted to reducing sugar.

1. Q- Enzyme Amylase/diastase✓/invertase
2. 37oC provide optimum temperature for reaction of enzyme Amylase/diastase
3. Oxidized to provide energy/ATP stored as glycogen.✓1
4. Cotyledon✓1

2.

Pinocytic vestile

Vacuole

Plasma membrane

Vacuole

Nuclear membrane

Nucleus

Chloroplast from a plant cell

Chromosomes

**W**

**Y**

**A**

**X**

**X**

**C**

**Z**

**B**

**D**

3.2 (a) A – Rough endoplasmic reticulum; 🗸

 B – Lysosome; 🗸Rej. lysosomes. ④

 C - Mitochondrion; 🗸 Rej. Mitochondria.

 D – Golgi bodies/apparatus ; 🗸

1. W – Site of photosynthesis; 🗸

X – Site of protein synthesis; 🗸 Acc. Protein synthesis. ④

Y – Containing hereditary materials/chromosomes/genetic material/manufacture

 of ribosome’s; 🗸

Z – Site of attachment of respiratory enzymes; 🗸

 (c) **NB**: Labeling must be on the diagram.

 Award 0 if otherwise. 🗸🗸②

 (d) Inner membrane folded into cristae; 🗸 to increase the surface area of respiration; 🗸

 (e) (i) Packaging of proteins/lipids;

 (ii) Manufacture of lysosomes;

 (iii) Secretion of substances outside the cell; (Max 2mks)

3.A-Flower stalk;

 B-Petal;

 C-Sepal

 D-Fruit stalk

 F-Persistent style/remains

ii) Beg;

iii) Mesocarp and endocarp fleshy;/Sacculent; (any correct one)

* Many seeds embedded in the endocarp;
* Divided into may loculi

b) S-Parietal;

 T-Marginal placentation;

c)

i) T-Self explosive mechanism/mechanical;

 E-Animal;

ii) Reasons- T has two lines of weakness/satures along which dehisces on drying;

 E-Brightly coloured to attract the animals/juicy/succulent;