**BURAMU I EXAMINATION-2021**

Kenya Certificate of Secondary Education

**SEPTEMBER-2021**

231/3  - **BIOLOGY-** **Paper 3**

**Marking Scheme**

**Question 1.(a)**

|  |  |  |  |
| --- | --- | --- | --- |
| Food substances | Procedures | Observations | Conclusion |
| Starch | On to small amount of food substance Q, add iodine solution dropwise. | The colour of iodine changes to blue-black. | Starch present |
| Reducing sugars | On to small amount of food substance Q,add equal amount of Benedict’s solution and heat to boil | The Colour of Benedict’s solution is retained/blue | Reducing sugars absent. |

(b) (i) Colour of Benedict’s solution changes from blue-green-yellow-brown

(ii) Reducing sugars present

(iii) R- could be an enzyme or R- could be a reducing

(C) (i) Blue colour of Benedict’s retained

(ii) R is not a reducing sugar. When R was boiled, it was denatured therefore could not hydrolyse starch to reducing sugars/Maltose.

(d) Q is a polysaccharides/Starch

(e) R is an enzyme (Diastase/Amylase), because hydrolyse substance Q to reducing sugars.

2. Use the photographs provided to answer the questions that follow.



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

*A-* *mitosis*

*B –meiosis*

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

*A anaphase*

Reason

 *Sister chromatids have separated (and are migrating to opposite poles of spindle fibre)*

 *B anaphase I*

Reason

*Homologous chromosomes have separated; and are migrating to the opposite poles of spindle.*

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

*- Testicles/testis*

*- Ovary*

(b) (i) What type of fruits is represented by photograph I? Give two resons.

Type *Berry;*

Reason – *presence of many seeds*

 *Fleshy mesocarp/endocarp*

 (ii) Name the agent of dispersal for fruits II and III (2mks)

I *wind*

II *animal*

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

II *has wing- like extension that increases surface area to be carried by air currents*

III *has hooks that make it stick onto animals fur/hair or even clothes of huma beings*

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

 *Free central*

3. (a) (i)Arthropoda;

 (ii)Exoskeleton;

 Jointed appendages;

 Segmented body;

 (b)Arachnida;

 (c) B E

 3 pairs of legs 4 pairs of legs

 3 body parts 2 body parts

 Has wings Lacks wings

 Antennae No antennae

 (d) A 1a, 2b, 5a Arachnida;

 B 1a, 2a, 3a, 4a Diptera;

 C 1b, 7b Echinodermata;

 D 1a, 2b, 5b, 6a Chilopoda;

 E 1a, 2b, 5a Arachnida