Name…………………………………………**Adm No**…….............

Index Number.......………………......... **Date**……….………......

231/3
BIOLOGY
(Practical)
Paper 3
JUNE/JULY 2022
Time: 1 ¾ hours

BUNAMFAN CLUSTER EXAMS
EXAMINATION - 2022

Instructions to Candidates

- ❖ Write your name, Admission number and your other details in the spaces provided above.
- ❖ Spend the first 15 minutes of the time allocated to read through the question paper before commencing your work
- ❖ Answer **ALL** the questions in the spaces provided.
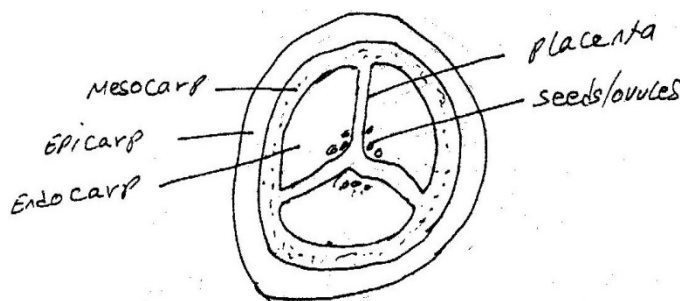- ❖ Additional pages must **not** be inserted

- **For Examiner's Use Only**

Question	Maximum Score	Candidate's Score
1	13	
2	13	
3	14	
Total Score	40	

1. You are provided with the following materials;
   - *Specimen A*
   - *Scalpel*
   - *50ml beaker*
   - *Glass rod*
   - *8cm visking tubing*
   - *2 pieces of strings*
   - *20ml distilled water in a wash bottle*
   - *100ml beaker*
   - *10ml Iodine solution*

1. You are provided with a specimen labeled **A**. Make a transverse section of the specimen.
(a) Draw and label the section   (3mks)

(b) What type of fruit is specimen A?   (1mk)

Berry

(c) Slice off about 2cm thick disc from the specimen. Peel it. Place the piece into a beaker and mash it into a paste using a glass rod. Add 20ml of distilled water and stir. Tie one end of the transparent tubing provided. Decant the extract into the tubing and tie the other end tightly, ensuring there is no leakage.
Immerse the tubing with its contents in a 100ml beaker containing Iodine solution for 20 minutes.
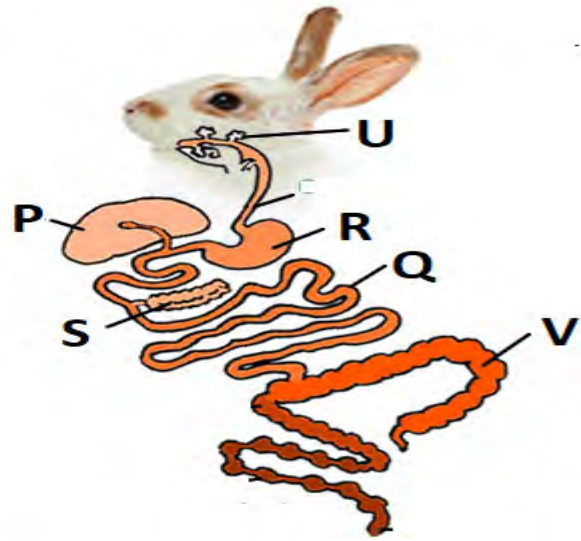(i)   Record your observations in the table below   (4mks)

	Extract inside visking tubing	Iodine solution outside the visking tubing
Before the experiment	**White /cream/ pale yellow**	**Brown /yellow**
After the experiment	**Blue black**	**Brown /yellow**

(i)   Explain the results obtained from c(i) above.   (5mks)
Iodine molecules in the beaker moved into the visking tubing by diffusion; reacted with starch to give the blue black colour;
Colour of Iodine outside the visking tubing remains unchanged; because starch has large molecules; that can not diffuse through the semi-permeable; membrane of the visking tubing

2. Study the photographs below and answer the questions that follow.

(a) With **observable** reasons identify the class of the specimen in the photograph .
  (i)   Class   **Mammalia**   (1mk)
  (ii) Reasons
        Presence of fur/hair
        Presence of external ear

(b) (i) Name the structures labeled   (4mks)

  P **Liver**

  Q **Small intestines/ileum**

  R **Stomach**

  S **Pancreas**

  (ii)   State the function of the parts labeled   (2mks)

  U **Secrete saliva**

  V **harbours/contains bacteria that secrete cellulose enzyme that digests cellulose**

(c) Study the photographs below depicting plants growing in different habitats.

(i)   Identify the habitats in which they are found   (2mks)

Y   Fresh water

Z   Dry/arid/semi arid/desert

(ii)   State the significance of the following structures found in the specimens shown above
       (2mks)
R   Prick/injure/irritate/harm herbivores/animals
S   Fills with air for buoyancy

3.   Below are photographs showing some observable features of animal
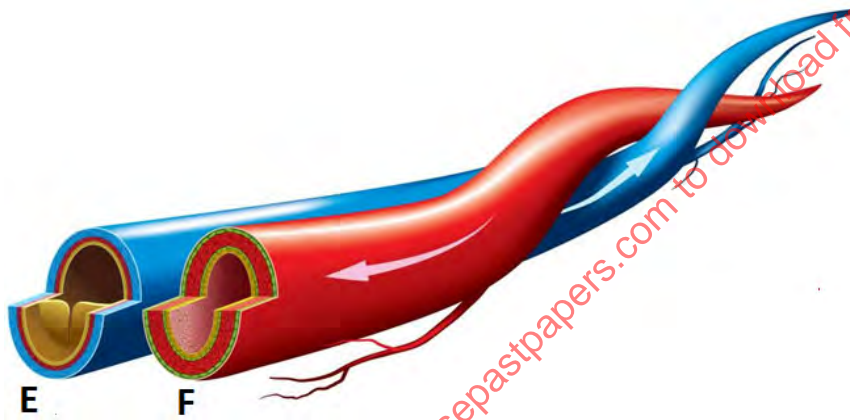

(a) Using the features in the order given below, construct a dichotomous key that can be used to

identify the specimens in the photographs.   (10mks)

- Presence or absence of backbone
- Presence or absence of wings
- Presence or absence of scales
- Presence or absence of pouch
- Bipedal or quadripedal
  1(a)   Animals without a

backbone…………………………………………………………………………….Scorpion

(b) Animals with a backbone..go to 2

2(a) Animals with wings..Eagle

(b) Animals without wings..go to 3

3(a)Animals with scales..Monitor lizard

(b)Animals without scales..go to 4

4(a) Pouch present..Kangaroo

(b)Without a pouch..go to 5

5(a) Bipedal ....Man

(b) Quadripedal..Gorilla

(b) Study the photographs below showing blood vessels in man.

(i) Using **observable features** identify the blood vessels   (2mks)

   E Vein

   F Artery

(ii) Using **observable features only**, give two differences between the two blood vessels

(2mks)

E	F
Wide lumen	Narrow lumen
Thin wall	Thick wall
Presence of valve	Valve absent