Name: ……...…… Index No: …….

Candidate's signature……

Date……

KAKAMEGA NORTH SUBCOUNTY JOINT EXAMINATIONS
KCSE Trial Exam

231/2
BIOLOGY
PAPER 2*(Theory)*
JULY 2018
2 Hours

INSTRUCTIONS TO CANDIDATES

Write your name, Index Number in the spaces provided above.
The paper consists of **two** sections **A** and **B**.
Answer ***ALL*** questions in section A in the spaces provided.
In Section B answer question 6 (Compulsory) and either question 7 or 8.

FOR OFFICIAL USE ONLY

QUESTION	MAXIMUM SCORE	CANDINDATES SCORE
1-5	40	
6	20	
7 or 8	20	

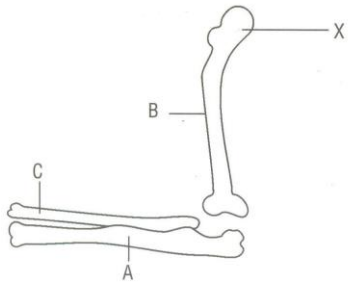
This paper consists of 8 printed Pages

Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing

SECTION A (40 Marks)

*Answer **ALL** questions from this section.*

1. Below is a diagram illustrating formation of a certain joint;



a) ***Identify*** the bones labeled ***B*** and ***C*** (2 marks)

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……

b) ***Name*** the cavity found on bone ***A*** (1 mark)

……

c) ***Identify*** the type of movable joint formed at the proximal end of bone ***B***. (1mark)

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d) ***State two functions*** of an exoskeleton in arthropods (2marks)

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e) ***Give two reasons*** why support is necessary in Plants (2marks)

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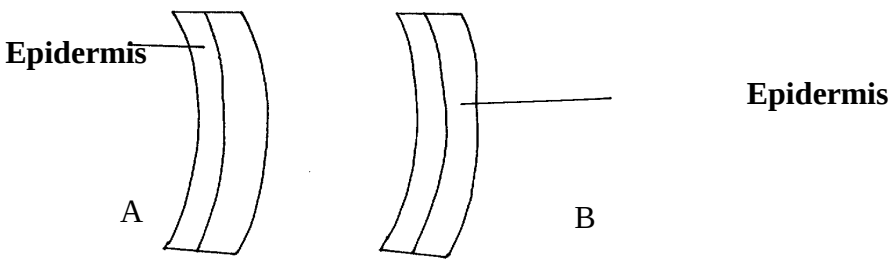
2. A 4cm straight piece of stem from a herbaceous plant was split lengthwise into two similar pieces. The pieces were placed in sugar solutions of different concentrations for 30 minutes. Their appearance after 30 minutes is as shown below:



a) ***Which*** physiological process is being investigated? (1mark)

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Account for the appearance of the piece in solution A: (4marks)

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b) ***How is*** active transport affected by metabolic poison? (2marks)

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c) ***Name*** the part of the cell that is useful in maintaining support in the herbaceous plants. (1mark)

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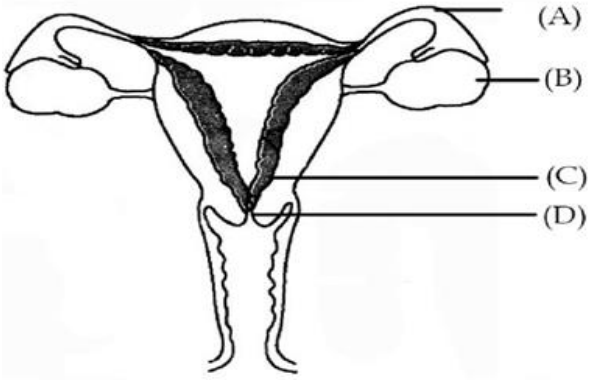
3. Study the diagram below and answer the questions the follow



a) ***Name*** the parts labeled ***C*** and ***D***. (2marks)

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b) ***State two*** hormones produced in the organ labeled ***B***. (2marks)

……

……

c) ***Give two*** adaptations of the structure labeled ***A*** that adapts it to its function. (2marks)

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d) ***Identify*** the labeled site where fertilization takes place (1mark)

……

e) ***What is*** the function of oxytocin hormone in the female body? (1mark)

……

4. A woman who is normal for haemophilia is married to a man who suffers from Haemophilia. One of their daughters Jenifer turns to be haemophiliac. Taking ***H*** for normal trait and ***h*** for haemophilia;

a) ***State*** the genotypes of the parents (2marks)

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……

b) (i) ***Work out*** the genotypes of the offspring.(*show your working*) (4marks)

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ii) ***State*** the genotype of Jenifer (1mark)

……

c) ***What is*** polyploidy? (1mark)

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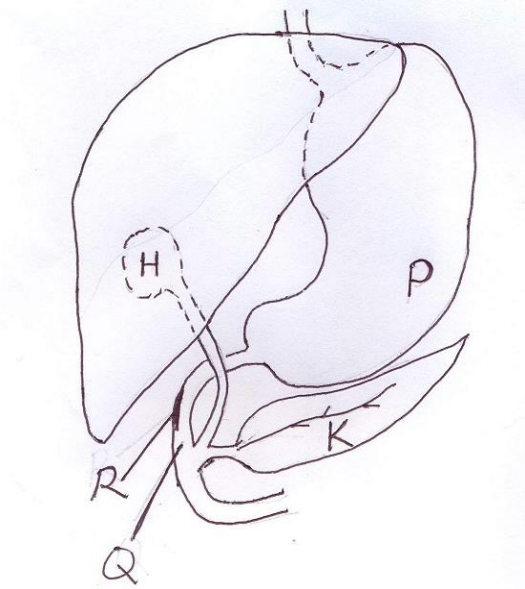
5. The illustration below show part of the alimentary canal. Study it then answer the questions that follow.



a) (i) Name structure labeled H. (1mark)

……

ii) ***Explain*** the importance of structure ***H*** in digestion. (2marks)

……

……

b) Organ labeled ***K*** has both endocrine and exocrine characteristics. ***Explain***. (2marks)

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c) (i) Region labeled ***P*** has acidic chyme but in region ***Q*** chyme is neutral. ***Explain***. (2marks)

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ii) ***Name*** the hormone produced by inner lining of part ***R***. (1mark)

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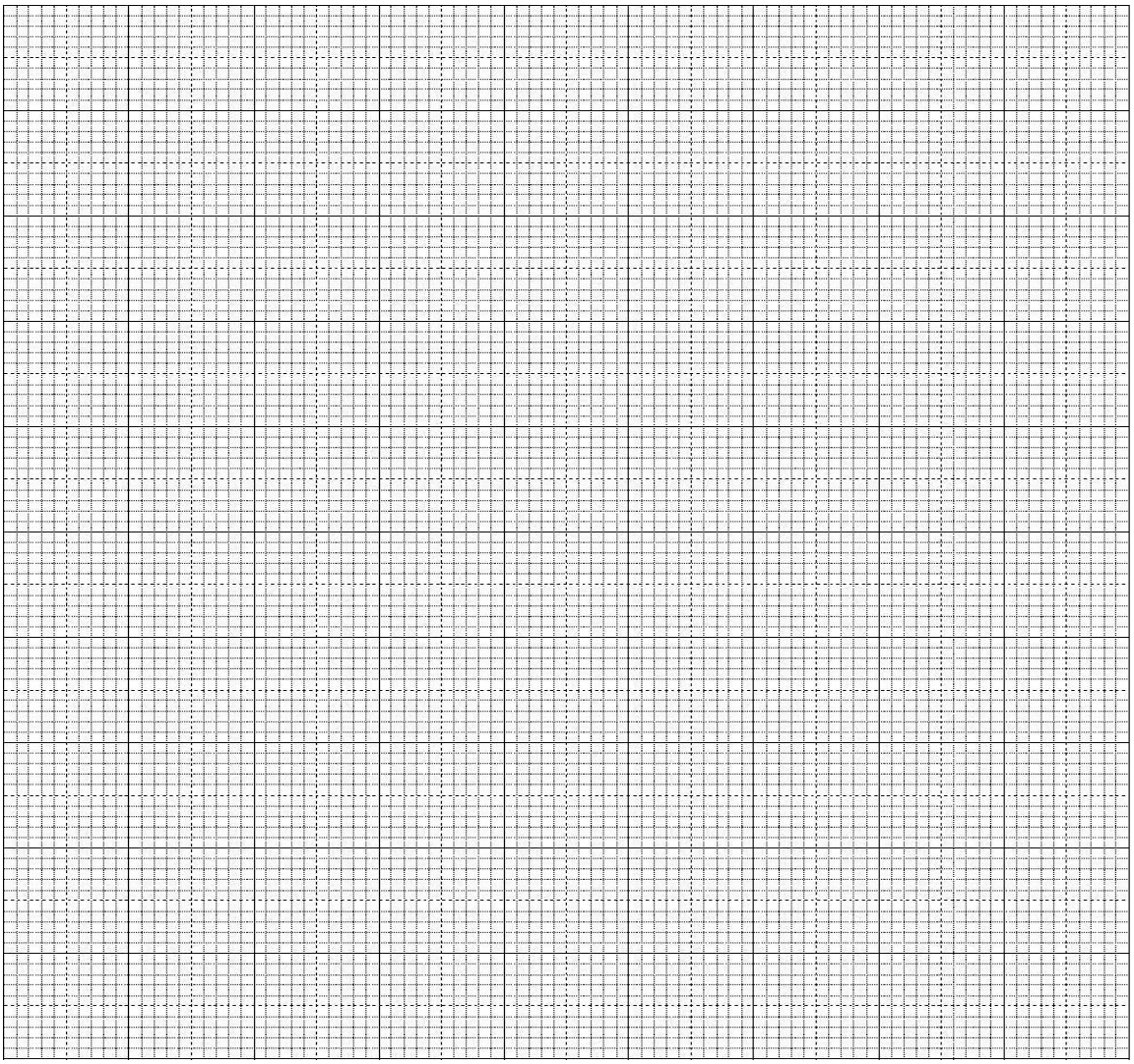
SECTION B (40 MARKS)

Answer question 6 (compulsory) and either question 7 or 8 in the spaces provided.

6. In an experiment to investigate certain processes in a given plant species, the rates of Carbon (IV) oxide released and intake were measured over a long period of time. The results of the investigation were as shown below.

Time of the day (hours)	6	8	10	12	14	16	18	20	22	24
Volume of Carbon (IV) oxide consumed (mm^3/ mm	10	43	69	91	91	50	18	0	0	0
Volume of Carbon (IV) oxide released (mm^3/ mm	38	22	10	3	3	6	31	48	48	48

a) On the same axes draw graphs of volume of Carbon (IV) oxide consumed and released against time. (7 marks)



b) ***Name*** the physiological process that lead to:

(i) Carbon (IV) oxide consumption. (1 mark)

……

(ii) Carbon (IV) oxide production. (1 mark)

……

c) ***Account for*** the shape of the curve for:

(i) Carbon (IV) oxide consumed. (3 marks)

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(ii) Carbon (IV) oxide released. (3 marks)

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d) (i) ***What*** is meant by compensation point. (l mark)

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(ii) From the graph, ***find*** the times of day ***when*** the plants attained compensation point. (2marks)

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e) ***Explain how*** temperature affects the rate of carbon(IV)oxide consumption in the plant. (2marks)

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7. (a) ***State four*** characteristics of gaseous exchange surfaces. (4marks)
(b) ***Describe*** the mechanism of gaseous exchange in a mammal. (l6marks)

8. (a) ***Describe how*** fruits and seeds are adapted to water and wind dispersal. (10marks)
(b) ***How*** are flowers adapted to insect pollination? (10marks)

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