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Name of School:.....

Biology

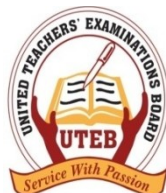
Paper 1

Name of Student:.....

(Theory)

Jul. /Aug. 2019

Signature:.....Personal No.....

2 ½ Hours**UTEB - JOINT MOCK EXAMINATIONS, 2019****Uganda Certificate of Education****BIOLOGY****(THEORY)****Paper 1****2 Hours 30 minutes****INSTRUCTIONS TO CANDIDATES:**

- ✓ This paper consists of section A, B and C.
- ✓ Answer all questions in sections A and B, plus two questions in section C.
- ✓ Write the answers to section A in the boxes provided, and answers to section C in the answer booklets provided.

For Examiner's Use Only			
Part/Question		Marks	Examiner's Signature And Number
SECTION A			
SECTION B	31		
	32		
	33		
SECTION C			
Total			

SECTION A (30 MARKS)

1. Arthropods are one of the most successful group of organisms on land because they;
- A. Have a water proof exoskeleton C. Have jointed legs ☐
- B. Can move very fast D. Have segmented bodies
2. Which of the following are structural adaptations to flight in birds?
- A. Light bones and webbed feet
- B. Webbed feet and light feathers
- C. Streamlined body and light bones. ☐
- D. Smooth body and light feathers.
3. The interaction between two species as they both attempt to use the same environmental resources is termed as;
- A. Competition C. Commensalism ☐
- B. Parasitism D. Coexistence
4. The presence of starch and not glucose is used to show that photosynthesis takes place in the leaves. This is because;
- A. Glucose is always formed during photosynthesis
- B. Starch is always formed during photosynthesis ☐
- C. Glucose formed is immediately converted into starch
- D. Glucose is never formed in leaves
5. Which of these hormones stimulates the re –absorption of water in the kidneys?
- A. Adrenaline hormone C. Insulin hormone ☐
- B. Thyroxine hormone D. Antidiuretic hormone
6. The role of suitable temperature in germination is to;
- A. Promote germination
- B. Accelerate food hydrolysis ☐
- C. Promote enzyme activities
- D. Enables oxidation of glucose
7. What is the role of the cambium in plants?
- A. Shoot elongation C. Lateral growth ☐
- B. Shoot enlargement D. Root tip formation

8. Which of the following initiates blood clotting in mammals?
- | | | |
|---------------|-----------------|--------------------------|
| A. Fibrinogen | C. Thrombokinas | <input type="checkbox"/> |
| B. Fibrin | D. Thrombin | |
9. During which stage of meiosis are the chiasmata formed;
- | | | |
|----------------|---------------|--------------------------|
| A. Metaphase I | B. Prophase I | <input type="checkbox"/> |
| C. Telophase I | D. Anaphase I | |
10. Which one of the following organisms undergo budding?
- | | | |
|---------------|------------|--------------------------|
| A. Amoeba | B. Yeast | <input type="checkbox"/> |
| C. Plasmodium | D. Mammals | |
11. The scales of a fish skin are used for;
- | | |
|--|--------------------------|
| A. Easy movement | <input type="checkbox"/> |
| B. Reflection of light | |
| C. Protection of inner parts | |
| D. Increased surfaced area of propulsion | |
12. In a flower the essential parts are;
- | | | |
|-----------------------|-----------------------|--------------------------|
| A. Stamens and petals | B. Pistil and sepals | <input type="checkbox"/> |
| C. Petals and sepals | D. Pistil and stamens | |
13. In which two parts of the alimentary canal are proteins chemically digested;
- | | | |
|-------------------------------|-----------------------|--------------------------|
| A. Small intestines and colon | C. Mouth and duodenum | <input type="checkbox"/> |
| B. Stomach and duodenum | D. Mouth and stomach | |
14. A pregnant mother suffers from weakened bones and teeth, the vitamins and minerals to correct this defects are;
- | | |
|---------------------------------------|--------------------------|
| A. Vitamin C, phosphorous and calcium | <input type="checkbox"/> |
| B. Vitamin B, iodine and calcium | |
| C. Vitamin A, calcium and clay | |
| D. Vitamin D, phosphorus and calcium | |
15. Which of the following processes is not carried out by bacteria only?
- | | | |
|--------------------|----------------------|--------------------------|
| A. Denitrification | C. Putrification | <input type="checkbox"/> |
| B. Nitrification | D. Nitrogen fixation | |
16. When one walks out of a bright sunshine to a poorly lit room, what happens in his eyes?
- | | | |
|---------------------------------------|-------------------------------|--------------------------|
| A. The circular iris muscles contract | C. The lens because thicker | <input type="checkbox"/> |
| B. The radial iris muscles relax | D. The circular muscles relax | |

17. The movement of part of a plant in response to a non – directional stimulus is termed as;
- | | | |
|-------------------|-----------------|--------------------------|
| A. Tropism | B. Taxis | <input type="checkbox"/> |
| C. Nasty movement | D. Phototropism | |
18. A woman who has small breasts, beards and a deep voice is like to be having an over secretion of;
- | | | |
|-----------------|---------------|--------------------------|
| A. Testosterone | B. Oestrogen | <input type="checkbox"/> |
| C. Oxytocin | D. Adrenaline | |
19. Vertebrarterial canals, broad flat transverse processes are characteristic of;
- | | | |
|----------------------|----------------------|--------------------------|
| A. Cervical vertebra | B. Sacral vertebra | <input type="checkbox"/> |
| C. Lumbar vertebra | D. Thoracic vertebra | |
20. The urine of a healthy person contains no glucose because;
- | | |
|--|--------------------------|
| A. The nephron is impermeable to glucose | <input type="checkbox"/> |
| B. Glucose passes back into the blood stream | |
| C. The kidneys convert glucose to urea | |
| D. Glucose is used for respiration before reaching the collecting ducts. | |
21. The route followed by an impulse passing along a motor neuron is;
- | | |
|---|--------------------------|
| A. Nerve endings, dendrone, axon, dendrites | <input type="checkbox"/> |
| B. Cell body, axon, dendrone dendrites | |
| C. Nerve endings, dendrites, dendrone, axon | |
| D. Dendrites, dendrone, axon, nerve endings | |
22. The circulatory system of an embryo is never in direct contact with the mother's blood vessels because;
- | | |
|---|--------------------------|
| A. Many substances in the mother's blood are poisonous | <input type="checkbox"/> |
| B. Mothers blood pressure would burst the capillaries in embryo | |
| C. It is connected to the uterus via the placenta | |
| D. The mother's blood contains no respiratory gases. | |
23. 160cm^3 of water was added to 250cm^3 of dry soil. The volume of the mixture after stirring was 380cm^3 . Calculate the percentage of air in the soil sample?
- | | | |
|----------|--------|--------------------------|
| A. 41.0% | C. 90% | <input type="checkbox"/> |
| B. 25.0% | D. 12% | |

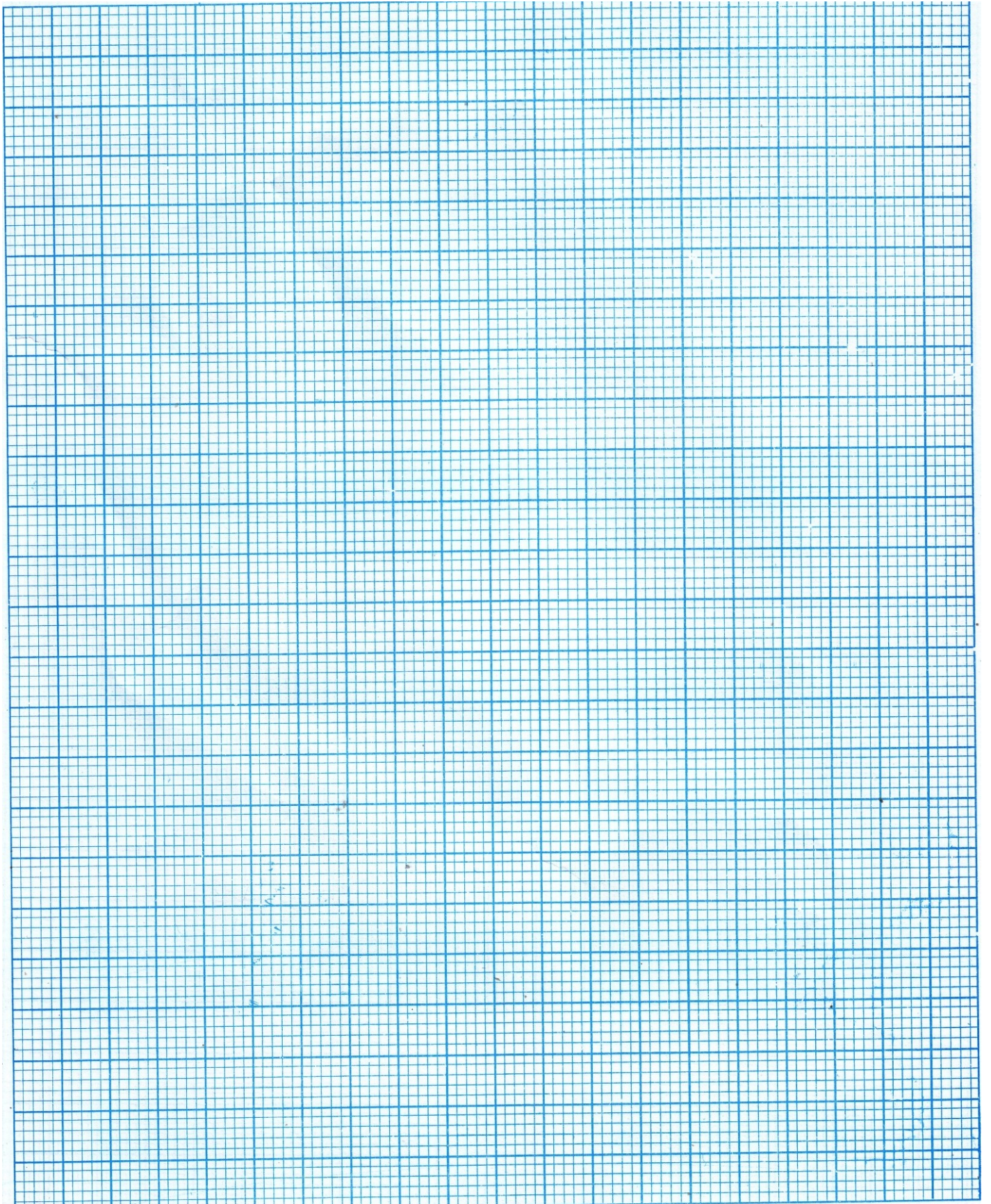
24. The following mechanisms / processes will easily lead to evolution of new species **except**;
- A. Inbreeding
B. Mutation
C. Isolation
D. Out breeding
25. This is likely to cause pollution of an aquatic habitat;
- A. Over fishing
B. Boat racing
C. Use of fertilizers
D. All the above.
26. Which one of the following is an advantage of vegetative propagation?
- A. Parents and off springs rarely compete
B. Colonization of new habitats is not easy
C. Variation among off springs will occur
D. Maintenance of parental characteristics in off springs.
27. This method is best for estimating of the population density of chimpanzees in a forest;
- A. Direct counting
B. Capture – recapture method
C. Aerial photography
D. Quadrant method
28. Growth can be measured using any of the following methods **except**;
- A. Age of an organism
B. Length of an organism
C. Volume of an organism
D. Fresh dry weight of an organism
29. Which of the following parts of a tooth contains living tissues?
- A. Cement
B. Pulp cavity
C. Enamel
D. Dentine
30. Individual with blood Group AB are said to be universal recipients because they have;
- A. No antigens
B. Antibody a and b
C. Both antigens and antibodies
D. No antibodies

SECTION B (40 MARKS)

31. The following results were obtained from a study of a population growth of fruit flies (*drosophila melanogaster*).

Time (weeks)	1	2	3	4	5	6	7	8	9	10
Number of flies	20	44	882	145	221	275	320	313	296	270

- (a) On the graph paper provided, plot the graph to show how drosophila population varies with time. (08 marks)



(b) Describe the trend of the graph during the 10 weeks. (03 marks)

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(c) Explain the trend of the graph during the 10 weeks. (03 marks)

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(d) Give two reasons for change which took place after seven weeks. (02 marks)

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(e) At the seventh week, it was observed that some of the flies were red eyed and others white eyed. In the previous generation, however all the flies were red eyed.

(i) If the two alternative eye colours are inherited according to the mendelian laws, which one of them is recessive? (01 mark)

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- (ii) How many of the flies counted at the seventh week were red eyed?
(show your working) (03 marks)

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32. (a) Complete the table below concerning blood transfusion in man. (04 marks)

Blood group	Can donate to	Can receive from
A		
B		
AB		
O		

- (b) What is the advantage of having blood group AB? (01 mark)

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(c) (i) What is the main disadvantage of having blood group O? (01 mark)

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(ii) What do you understand by agglutination of Red blood cells? (02 marks)

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(d) (i) What are anti bodies? (02 marks)

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33. (a) Explain how each of the following is achieved during movement of the Tilapia fish in water.

(i) Reduced water resistance. (02 marks)

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(ii) Coming on the surface to feed (02 marks)

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(iii) Braking in case it has been moving fast. (02 marks)

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- (b) Birds have been found to enjoy aerial life without difficulty. State four structural adaptations that have enabled birds to live an aerial life. (04 marks)

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SECTION C (30 MARKS)

34. (a) State five roles played by invertebrates in soil improvement. (05 marks)
- (b) Describe an experiment you would carry out to show that soil contains living organisms. (10 marks)
35. (a) Define the term excretion. (02 marks)
- (b) With out using diagrams, describe the process of urine formation in man. (13 marks)
36. (a) Differentiate epigeal germination from hypogeal germination. (04 marks)
- (b) State the roles played by the following in seed germination;
- (i) adequate supply of water (02 marks)
- (ii) favourable temperature (02 marks)
- (c) Describe an experiment that can be carried out in a laboratory to show that germinating seeds respire. (07 marks)
37. (a) Briefly describe the digestive processes that take place in;
- (i) The duodenum (04 marks)
- (ii) The ileum (05 marks)
- (b) How is the absorption surface of the alimentary canal adapted for its function? (06 marks)

End