

Name:

Centre/Index No.

Signature

553/1
BIOLOGY
(Theory)
Paper 1
July/Aug. 2023
2½ hours

ASSHU - KASESE JOINT EXAMINATIONS BOARD (AKJEB)

MOCK EXAMINATIONS

Uganda Certificate of Education

BIOLOGY

(Theory)

Paper 1

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of three sections; A, B and C. Answer all questions in Section A and B plus any two questions in Section C.

Write the answers for section A in the boxes provided, and confirm the answers in the answer grid provided at the end of the section. Write the answers for section B in the spaces provided.

Answers for section C should be written on the answer sheets provided.

Drawings and illustrations are to be drawn neatly using a sharp HB pencil.

For Examiners' use only		
Section	Score	Examiner's initials
A		
B : No. 31		
No. 32		
No. 33		
C: No.		
No.		
Total		

SECTION A

1. One of the following organisms serves as a commensal
A. Uganda kob
B. Tick
C. Tape worm
D. White egret
2. Which one of the following parts of a flower is an essential part?
A. Corolla
B. Stigma
C. Calyx
D. Sepal
3. One of the following insects is an example of lepidoptera
A. Tsetse fly
B. Cockroach
C. Butterfly
D. Beetle
4. What is the role of light in the process of photosynthesis
A. Split water into oxygen and hydrogen
B. Combine water and carbon dioxide
C. Increase volume of oxygen
D. Increase rate of photosynthesis
5. Which one of the following is not a function of insulin
A. Converts glucose to glycogen and fats
B. Accelerates conversion of glucose to glycogen and fats
C. Controls the level of glucose in blood
D. Stimulates the liver to convert glucose to glycogen and fats
6. Which one of the following animals is expected to consume the least amount of food?
A. Rat
B. Elephant
C. Buffalo
D. Cat
7. Which one of the following is not a function of Bacteria?
A. Ripening of bananas
B. Decomposition
C. Fermentation
D. Yoghurt formation
8. The fruit that opens a long one line of weakness is referred to as;
A. Achene
B. Follicle
C. Capsule
D. Legume
9. Which one of the following structures, doesn't repair when damaged?
A. Capillary
B. Blood vessel
C. Nerve
D. Venal tubule

10. Which one of the following stages of an insect, doesn't exhibit life process physically?
- A. Larval stage
B. Egg stage
C. Pupal stage
D. Adult stage
11. Which one of the following properties retards movement of food along the alimentary canal giving it enough time for digestion?
- A. Presence of micro villi
B. Length of the ileum
C. Narrowness of the ileum
D. Coiling of the ileum
12. Which one of the following blood groups lacks antigens?
- A. Group A
B. Group O
C. Group AB
D. Group B
13. Which one of the group of organisms causes elephantiasis?
- A. Annelida
B. Platyhelminthes
C. Nematode
D. Mollusca
14. After what stage of mitosis do daughter cells enter interphase:
- A. Metaphase
B. Anaphase
C. Prophase
D. Telophase
15. The plant is characterized by the following;
- Broad leaves
 - Numerous stomata
 - Thin leaves
 - Large air filled tissue
- These are characteristics of
- A. Xerophytes
B. Hydrophytes
C. Halophytes
D. Mesophytes
16. Which one of the following possess a corm as a type of stem?
- A. Canailly
B. Onion
C. Ginger
D. Corocasia
17. Which one of the following bones is the longest in the human body?
- A. Tibia
B. Radius
C. Humerus
D. Femur

18. Why does lactic acid concentration for an athlete slightly increase soon after the exercise has ceased?
- A. Because the athlete is breathing deeply
 - B. Muscles are very active
 - C. Muscles are still respiring anaerobically
 - D. Muscles have enough oxygen
19. Where are the sensory nerve endings located in the skin? They are located in
- A. Hypodermis
 - B. dermis
 - C. epidermis
 - D. conified
20. Which structure of the ear sends information from the ear to the brain?
- A. Semicircular canals
 - B. Ear drum
 - C. Auditory canal
 - D. Auditory nerve
21. Which one of the following receives the highest amount of energy along the food chain?
- A. Antelope
 - B. Bacteria
 - C. Hawk
 - D. Lion
22. During carbon cycle, under what condition do Bacteria fail to operate?
- A. Alkaline condition
 - B. Aerobic condition
 - C. Acidic condition
 - D. Neutral condition
23. Which one of the following proteins affects the viscosity of blood?
- A. Albumin
 - B. Fibrinogen
 - C. Globulin
 - D. Thrombin
24. Which part of the eye continues to grow with age?
- A. Eye ball
 - B. Cornea
 - C. Choroid
 - D. Eye's lenses
25. Under which region of the kidney is the distal convoluted tubule located?
- A. Medulla
 - B. Pyramid
 - C. Cortex
 - D. Pelvis
26. Which one of the following is an autotroph?
- A. Black jack
 - B. Tick
 - C. Hen
 - D. Locust
27. Which one of the following is an example of multiple allele?
- A. Albinism
 - B. Blood group
 - C. Height
 - D. Haemophilia

28. One of the following is density dependent factor.
- A. Rain fall
 - B. Altitude
 - C. Predators
 - D. Light
29. Which one of the following controls the flow of food from the stomach into the duodenum?
- A. Muscle ring
 - B. Cardiac sphincter
 - C. Stomach wall
 - D. Pyloric sphincter
30. Where is the intermediate neuron located in the spinal cord?
- A. Grey matter
 - B. Dorsal root
 - C. White matter
 - D. Ventral root

SECTION B (40 MARKS)

31. Use the table below to answer questions that follow;

Velocity of wind (ms^{-1})	0	2	4	6	8	10	12	14
Rate of transpiration (units)	0	4	8	15	30	2	1	0

- (a) Using a graph paper, plot the curve
 (b) Describe the graph

(6 marks)

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(5 ½ marks)

- (c) Explain the shape of the graph

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(6 ½ marks)

(d) Name other **two** factors that affect rate of transpiration

(2 marks)

32. Briefly, explain the following observation in any ecosystem.

(i) Primary producers are always more than the rest of the organisms.

(2 marks)

(ii) Secondary consumers are less than the primary consumers.

(2 marks)

(iii) Outline any five effects of increasing tertiary consumers in an ecosystem

(5 marks)

() What is the role of decomposers in an ecosystem

(1 mark)

Use the fig. 1 below to answer question that follow.

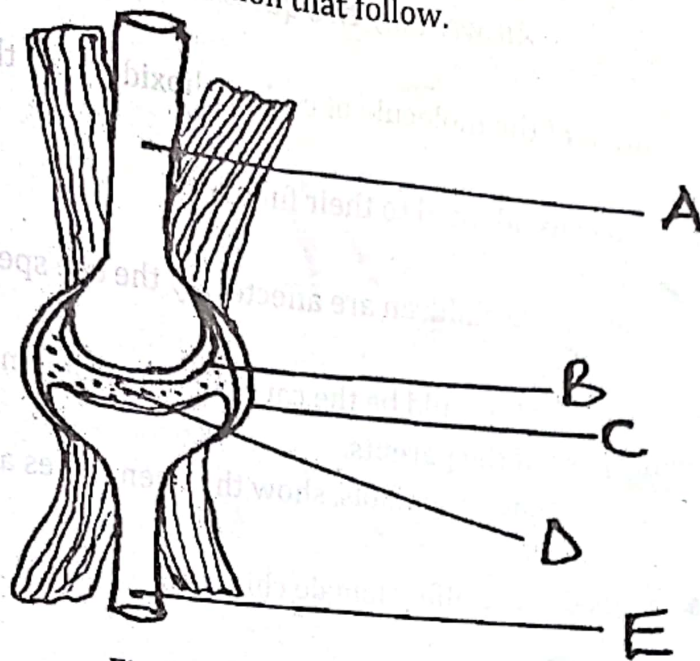


Fig. 1

i) Name the parts A to E

(5 Marks)

- A.....
- B.....
- C.....
- D.....
- E.....

ii) Name the types of joint at D

(1 Mark)

-
-

iii) A part from the knee, name other 3 parts where you can locate this type of joint in the body of man

(3 marks)

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iv) What is the importance of structure D.

(1 mark)

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SECTION C (30 MARKS)
Answer only two questions

34. (a) Trace the movement of the molecule of carbon dioxide from the tissue up to the alveolus. (10 marks)
(b) How are red blood cells adapted to their functions (5 marks)
35. In a certain family some male children are affected by the eye speck which is recessive and sex linked. (1 mark)
(i) Of the two parents, who could be the cause of this problem. (2 marks)
(ii) State the genotypes of the parents. (11 marks)
(iii) Using appropriate genetic symbols, show the phenotypes and genotypes of the parents. (1 mark)
(iv) Why doesn't this disease affect female children?
36. (a) Describe the structure of the nephron without the help of the diagram. (10 marks)
(b) Explain what happens in the descending limb, loop of Henle and ascending limb during excretion. (5 marks)
37. (a) With the help of the drawing only, describe the structure of the motor neuron (5 marks)
(b) Describe the events that occur when one touches a hot object (10 marks)

END