Name …… Centre/Index No. ……..

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BIOLOGY

PAPER 1

JUL/AUG. 2023
2HRS 30 MINS

KAYUNGA SECONDARY SCHOOLS HEAD TEACHERS AND PRINCIPALS ASSOCIATION (KASSHPA)
JOINT MOCK EXAMS 2023
UGANDA CERTIFICATE OF EDUCATION
MOCK EXAMINATIONS
BIOLOGY
PAPER 1
2hrs 30 mins

INSTRUCTIONS.

- *Answer all questions in section A and B.*
- *Write the answers in section A in the boxes in the margins of each question*
- *Write answers to section B in the spaces provided.*
- *Answer only two questions from section C*
- *Write the answers to section C on the answer sheets provided.*

FOR EXAMINER'S USE ONLY			
SECTION		MARKS	EXAMINER'S INITIALS
A	1-30		
B	31		
	32		
	33		
C	34		
	35		
	36		
	37		
TOTAL			

1. Which of the following is correct for all the bacteria?

A. possession of flagella. C. are unicellular.

B. possession of a true nucleus. D. are heterotrophic.

2. The major problem faced by land organisms with lungs is that.

A. oxygen diffuses very slowly in the air.

B. gaseous exchange involves water loss.

C. uses a lot of energy to breathe.

D. lungs are located so deep in the body increasing diffusion distance.

3. Which one of the following trophic levels has the least amount of energy?

A. producer C. Primary consumer

B. secondary Tertiary Consumer

4. Which one of the following is an active process?

A. uptake of water by roots.

B. uptake of mineral salts

C. movement of water along xylem.

D. movement of water across endodermis.

5. Water logged soils have

A. large air spaces C. small soil particles

B. large soil particles D. low capillarity

6. Which one of the following organisms has the largest surface area to volume ratio?

A. Goat B. Cow C. Elephant. D. whale

7. Prolonged bleeding is a deficiency symptom for vitamin

A. B B. C C. K D. A

8. Which of the following pair of organisms are anaerobic?

A. Man and dog C. cow an man

B. fish and crocodile D. Fungi and bacteria

9. When a policeman stretches his hand to stop fast moving taxi;

A. Biceps contracts C. both biceps and triceps contract

B. Triceps contracts D. both biceps and triceps relax.

10. which one of the following methods allows a mammal to lose heat?

A. relaxation of arterioles.

B. contraction of erector pili muscles.

C. development of goose pimples

D. closing of jaw for a long time.

11. At what part of the nephrone is glucose completely reabsorbed?

A. Distal convoluted tubule. C. Descending loop of henle

B. Assending loop of henle. D. Proximal convoluted tubules.

12. The hardness of a bone is due to

A. Sodium salts C. Magnesium salts

B. Calcium salts D. synovial fluid.

13. Which of the following sets of bones form a joint allowing a person to squart?

A. Humerus , tibia and radius C. Humerus, fibula and radius

B. Femur , tibia and radius D. Femur, tibia and fibula

14. Which one of these is true about myopia?

A. Corrected by convex lens

B. Corrected converging lens

C. Near object is formed behind the retina.

D. Near object is formed at the retina.

15. A reflex center of the brain controlling blood pressure, coughing, swallowing, squeezing and yawning is

A. Cerebellum C. Hypothalamus

B. Medulla oblongata Cerebrum.

16. The regions of most active growth in plants are found mainly in the

A. Stems and leaves C. Axillary buds and flowers

B. Stems and roots D. roots and flowers

17. Which of the following affects growth of plants and NOT animals?

A. Availability of nutrients

B. Accumulation of toxic waste products

C. PH medium

D. Light intensity

18. The prevention of back flow of blood to the right ventricles is due to

A. tricuspid valve C. Semilunar valve

B. Bicuspid valve D. Anal valves.

19. Tendons join;

A. Bone to muscle C. Bone to bone

B. Muscle to bone D. Bone to cartilage

20. Which one of these shows a correct crop rotation;

A. Maize, millet, sorghum and beans

B. Beans, groundnuts, cassava and pasture

C. Maize, groundnut, cassava and pasture

D. Pasture, cassava, potatoes and yams

21. Which one of these is a functional differences between artery and veins

A. Vein has valves whereas artery lacks valves.

B. Vein has wide lumen while artery has narrow lumen.

C. veins are thin walled arteries are thick walled.

D. Veins carry blood towards the heart while arteries carry blood away from the heart.

22. In consideration of a food chain below.

Grass → locust → hen → man → lion

Which of the following is correct if man was removed from the chain? Population of

A. Grass would decrease

B. Locust would decrease

C. Lion would decrease

D. Lion population would remain the same

23. What would be the effect of the gall bladder failing to function, No digestion of

A. Proteins C. Vitamins

B. Lipids D. Carbohydrates

24. Blood enters the heart through venacava and pulmonary vein , which of the following paths can the blood follow after entry?

A. Right auricle to right ventricle

B. left auricle to right ventricle

C. right auricle to left ventricle

D. right auricle to left auricle

25. Which of these bacteria convert ammonia to nitrates?

A. Nitrobacter C. Nitrosomonas

B. Denitrifying bacteria D. Azotobacter

26. Plants which during their first year, produce roots and shoots, and store food materials to be used during the secondary year for rapid growth are called.

A. Perennials C. Animals

B. Biennials D. Deciduous

27. A daily meal accompanied with orange and lemon juice would prevent.

A. Rickets C. Beriberi

B. Anemia D. Scurvy

28. Which one of these would favour rate of transpiration.

A. Sunken stomata C. low humidity

B. low light intensity D. Lack of water in soil.

29. Which one of the following characteristics allows insects to like in dry habitats?

A. Spiracles C. Wings

B. Hairy bodies D. Waxy cuticle

30. Wind pollinated flowers;

A. have lobbed stigma

B. produce few pollen grains

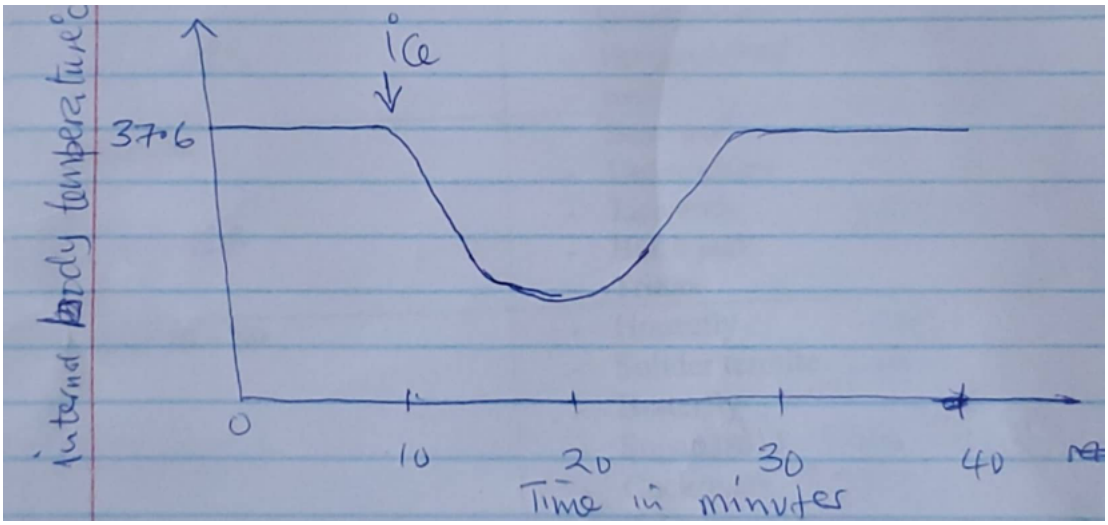
C. have long filaments

D. produce sticky pollen grains

SECTION B

ANSWER ALL QUESTIONS

31 The graph below shows the results of an investigation on internal body temperature of a naked man over a given period of time. The man was rested in a temperature controlled chamber maintained at 45^0C and at the time shown was given a quantity of ice to consume. Study the graph carefully and answer the questions that follow.



a) Describe the graph

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b) Explain the shape of the graph after the man consuming ice. (3marks)

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c) i) On same the graph above sketch the variation of the skin temperature of the same man from the start of the investigation. (3marks)

ii) Explain the changes in your sketch. (3marks)

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d) Explain how organisms in the tropics are adapted to their environment.(7 marks)

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32.Immediately after birth a set of triplets two of whom were known to be identical twins were separated are brought up by different families. The table below shows data for the triplets at the age of 20 years

	Mary	Joan	Liz
Height (m)	1.78	1.78	1.74
Weight (kg)	78	80	86
Blood group	0	AB	0
IQ	135	140	125

(a) (i) Which of the two girls are identical twins (1mk)

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(ii) Explain your choice above (1 ½ mks)

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(iii) Suggest why the two girls above were different from each other in any of the ways shown in the table (1mk)

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(b) What evidence does the finding tend to show about variations in

(i) Height (1mk)

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(ii) Weight (1mk)

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(c) The 3 girls got together to try to find their original parents and narrowed their search on four possible couples;

Couple	Characteristics
1	One had blood group A and the other had group B
2	Both had AB
3	One had blood group A and the other AB
4	One had group O and the other AB

(i) Which of the couples were the original parents (1/2mk)

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(ii) Give a reason and show how you arrived at your choice (4mks)

Q. 33. In one of the natural ecosystems in Uganda, the following organisms were found

- grass, snakes, toads, squirrels, eagles, foxes, spiders, grasshoppers, grass hoppers and bacteria

(a) Construct a suitable food chain consisting four tropic levels. (2marks)

(b) Using suitable means show all the possible feeding relationships of the organism in the ecosystem (2marks)

c) How does the information presented in (a) above different from that in (b) (1mark)

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(d) Describe what might happen to the ecosystem if a disease killed all the squirrels. (2marks)

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(e) Explain what might happen to the ecosystem if the area was sprayed with an insecticide. (2marks)

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(f) What part is played by bacteria in maintaining the ecosystem. (1mark)

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SECTION C

34.a) Explain how flowers are adapted to wind pollination. (6marks)

b) Explain how pollination occurs by bees. (6marks)

c) What are the benefits of sexual reproduction in plants? (3marks)

35.a) Explain what happens when

(i) a bright light beam from a torch is directed into the eye of a human being

.

(6mks)

(ii) light shines on the shoot of maize seedling from one side. (5mks)

b) How do the responses differ from each other? (4mks)

36a) What is a pollutant? (1mark)

b) Explain the effects of the different water pollutants to aquatic life. (14 marks)

37 a) Explain the movements of a water molecule from a root hair cell to the atmosphere in a flowering plant. (11marks)

b) Explain how the following factors affect the rate of water loss from plant leaves.

i) high humidity (2marks)

ii) wind (2marks)

END