SCIENCE CENTRE

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SENIOR TWO BIOLOGY

DURATION 1Hrs: 30 MINS

Instructions: ***Attempt all questions***

SECTION A

1. Which name is given to a group of individuals that can reproduce to produce fertile offspring?
A. Genus B. Kingdom C. Species D. Organ system

2. In animals, what is formed by blood?
A. Cell B. Tissue C. Organ D. Organ system

3. Which system is used for naming species?
A. Binomial B. Conservation C. Dichotomous D. Natural selection

4. The table shows some features of animals. Which animal could be a bird?

	Feature			
	Feathers	Gills	Hair	Wings
A.	✗	✓	✓	✗
B.	✓	✓	✗	✗
C.	✓	✗	✗	✓
D.	✗	✗	✓	✓

KEY
✗ = Absent
✓ = Present

5. A student draws a diagram of a plant cell. The diagram is 40 mm in width. The plant cell is 0.02 mm in width. What is the magnification of the student's drawing?

A. × 0.005 B. × 0.08 C.×200 D. × 2000

6. Which type of living animal has a **rough, dry, scaly skin**?
A. Amphibian B. Fish C. Mammal D. Reptile

7. What is the heart?
A. Cell B. Organ C. Organ system D. Tissue

8. Which substance is transported by xylem vessels?
A. Carbon dioxide B. Oxygen C. Sugar D. Water

9. Breathing roots are common with plants living in which soils?
A. Swamp B. Dry soil C. Rocks D. Humus

10. Which process involves the release of energy from food substances in all living cells?
A. Breathing B. Nutrition C. Respiration D. Transpiration

11. What is the correct order of arthropod groups, from those with most legs to those with fewest legs?
A. arachnids →crustaceans →insects →myriapods
B. crustaceans →myriapods →insects →arachnids
C. insects →arachnids →myriapods →crustaceans
D. myriapods →crustaceans → arachnids →insects

12. What is the total magnification got from the eye piece marked x10 and objective lens x4? A. x14 B. x6 C. x40 D. x400

13. Which characteristic is shown when a person smells a gas in the air?
A.Excretion B. Movement C. Respiration D. Sensitivity

14. The scientific name for humans is *Homo sapiens*. What does *Homo* refer to?
A.Phylum B. Genus C. Kingdom D. Species

15. A fish obtains its oxygen from
A.The Oxygen of H_2O B. The oxygen dissolved in water
C. The air C. Its food

16. Many Fungi get their food by
A.Absorbing nutrients from the soil
B. Secreting enzymes into dead organic matter
C. Ingesting other organisms and digesting them
D.Making their food during photosynthesis

17. In a flowering plant, the *spongy mesophyll* is to be found in
A.Roots B. Stem C. Leaf D. Fruit

18. The root of a flowering plant absorbs water and mineral ions mainly through
A.Epidermis B. Root hairs C. Phloem D. Xylem

19. Which of the following is true of all living organisms?
A.They respire. B. They consist of many cells.
C. Their cells have cell walls. D. They digest their food.

20. Which one of the following characteristics is possessed **only** by mammals?
A.They suckle their young. B. They have a spinal column.
C. Their bodies have coverings. D. They are 'warm-blooded'.

21. Which of the following are characteristics of plants **but not** of animals?
A.Made up of many cells. B. Contain chlorophyll.
C. Cells have nuclei. D. Contain cytoplasm in their cells

22. Which of the following distinguishes humans from all other primates?
A.External ears. B. Have a memory.
C. Five-fingered hands. D. Power of speech.

23. Malaria is transmitted by
A.Droplet infection B. Contaminated water
C. Mosquitoes D. Houseflies

24. Which of the following statements is true? All cells
A. Are specialised B. Contain chloroplasts.
C. Have a cell wall D. Have a cell membrane.

25. Which of the following is not a common characteristics of living things?
A. locomotion B. Movement C. excretion D. reproduction.

26. The function of white blood cells in the body is to ……
A. Transmit nervous impulses in the body
B. Prevent excess loss of blood from the body
C. Destroy disease organisms in the body
D. Transport oxygen in the body

27. Which of the following cells in the leaf contain the least number of chloroplasts?
A. palisade cells B. guard cells C. Epidermal cells
D. spongy mesophyll cells

28. Which of the following features belong to both an arachnida and an insecta?

A. cuticle and two pairs of wings B. six legs and two pairs of wings
C. six legs and antennae D. jointed legs and cuticle.

29. Which of the following organisms is an autotroph?

A. Tick C. Yeast
B. Mushroom D. Algae

30. Which cross section of angiosperms is represented below?

A. Monocot stem.
B. Dicot stem.
C. Monocot root
D. Dicot root

SECTION B

31. The figure below is a rhizopus (common bread mould). Study the figure and answer questions that follow.

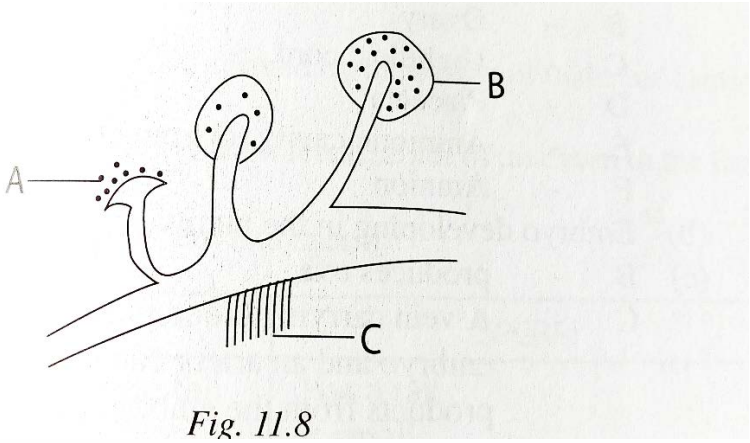

Fig. 11.8

a) To which kingdom does a rhizopus belong?

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b) Name the parts A to E.

A……

B……

C……

c) Give five economic importance of the Kingdom identified in 32 (a) above.

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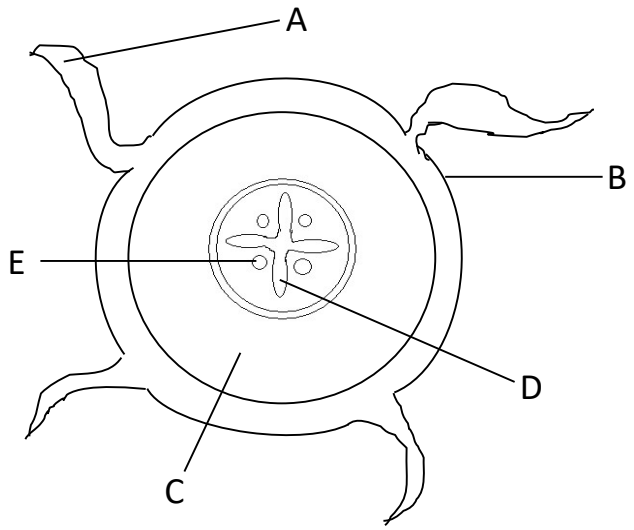
32. The diagram below shows a transverse section of a dicot root. Use it to answer the questions that follow.



(a) Name the parts A to E.

A…… B…….

C…… D…….

E……

(b) State the function of the following parts;

A ……

D ……

C ……

(c) What collective name is given to D and E.

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(d) Outline two primary functions of roots.

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(e) State any two root modifications and their functions.

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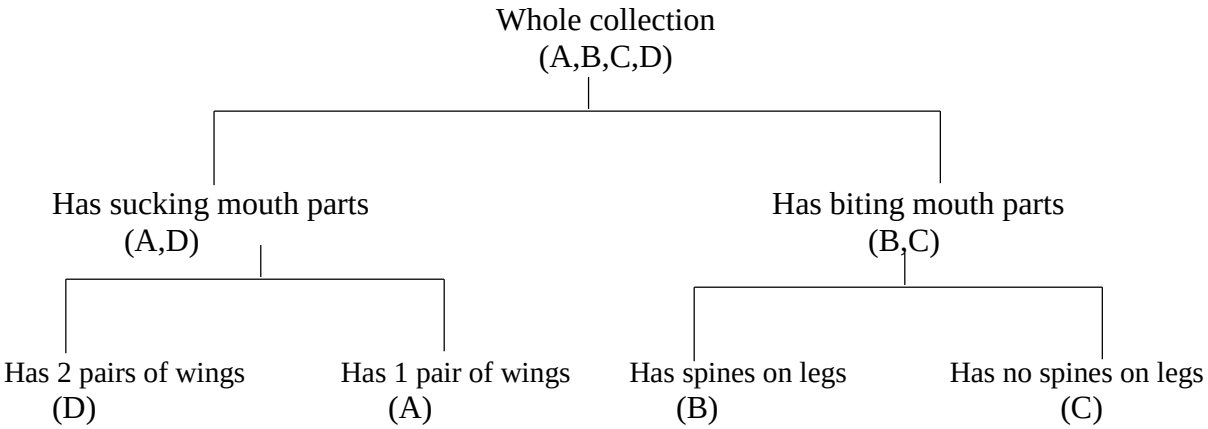
33. Akiki, a senior two student collected four insects; A, B, C and D, from within the school compound and outlined the characteristics of each. She then came up with a flow chart that would help her to make a dichotomous key; in order to identify each of the specimens. Below is the flow chart that she drafted.



(a) From the flow chart above:

(i) Outline any three characteristics of specimen D.

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(ii) State any one example of an insect that could be represented by specimen A in our environment.

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(b) Outline any two distinguishing characteristics of insects.

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(c) From the flow chart above, construct a dichotomous key to identify specimens A, B, C and D.