NAME.....Class.....

END OF TERM 1 EXAMS 2018
S.4 BIOLOGY SET 2
Time: 2 hours 30 Minutes

Instructions:
Answer all questions in sections A and B.
Answer ALL numbers in section C.
Answers to Section A should done by circling the best 0bjective.

SECTION A

1. Which of the following organs has no role in digestion of food?

   A. Pancreas B. Spleen C. Liver D. Salivary glands

2. By which one of the following processes do mineral salts pass through the cells of the cortex across the vacuoles?

   A. Osmosis B. Active transport C. Diffusion D. Capillarity

3. Which one of the following pairs of organs is important in the digestion of fats?

   A. Stomach and liver
   B. Pancreas and stomach
   C. Liver and pancreas
   D. Stomach and mouth

4. Isotonic solutions are the ones whose concentration is
   A. Weaker than the cell sap of a cell placed in it
   B. The same as that of the cell sap of a cell placed in it
   C. Differ slightly
   D. Higher than the cells surrounding it

5. The force which holds water molecule together in a continuous column is
A. Diffusion B. B. Osmosis C. Surface tension D. Cohesion

6. An endosperm is formed in plants when the second male nucleus fuses the

   A. Egg nucleus
   B. Polar nuclei
   C. Antipodal nuclei
   D. Embryo sac

7. Which one of the following characteristics may be used to determine whether leaves are compound OR simple?

A. Nature of margin
B. Number of leaflets
C. Type of venation
D. Presence of leaflets

8. The following events occur during germination of a bean seed.
(i) Development of lateral roots.
(ii) Growth of radicle out of the testa.
(iii) Hypocotyl pulls cotyledons out of soil.
(iv) Growth of root hairs.

Which one of the following gives the correct sequence of the events?

A. (i), (ii), (iii) and (iv)
B. (ii), (iii), (iv) and (i)
C. (ii), (iv), (i) and (iii)
D. (ii), (i), (iii) and (iv)

9. Which of the following conditions increase the rate of transpiration?

A. High temperatures, windy, and high humidity
B. Low temperatures, windy and high humidity
C. High temperatures, low humidity and windy
D. Low temperatures, low humidity and still air

10. Which one of the following shows the correct order of cell organization?

A. Organism system organ
B. Tissue organ organism
C. Organ tissue system
D. Tissue organ system

11. What are the products of the hydrolysis of lactose?

A. Galactose and fructose
B. Glucose and galactose
C. Glucose
D. Glucose and fructose

12. Which of the following is true about arteries? They----------

A. Carry blood away from the heart
B. Carry deoxygenated blood
C. Carry oxygenated blood
D. Possess valves along their length

13. Which one the following features is typical to class insecta?

A. Jointed legs B. Three body parts
C. Complete metamorphosis D. Exoskeleton

14. A flaccid cell
A. Is one that cannot allow in any more water
B. Is one that has lost strength
C. Is one that has lost its vacuole
D. Is one that is filled with water

15. The term destarching refers
A. Removing starch from plant leaves by exposing leaves them to light
B. Removing starch from plant leaves by putting leaves into darkness
C. helping plant leaves to make starch by exposure to light
D. Boling plant leaves in alcohol

16. Translocation means.....

A. Absorption of food in plants B. Transpotation of water in plants
C. Transpotation of food in plants D. Loss of water in plants

17. The type of erosion which involves loss of little amount of water with small trenches is called

A. Rill erosion B. Gulley erosion
C. Sheet erosion D. Splash erosion

18. A plant tissue which is tubular, open-ended, lignified and thickened walls is:

A. Tracheid B. Xylem vessel C. Parenchyma D. Sieve tube

19. Which one of the following parts of the alimentary canal works on fats chemically?

A. Mouth B. Stomach C. Duodenum D. Colon

20. Which one of the following groups contains the largest number of organisms?

A. Order B. Species C. Class D. Phylum

SECTION B

21.(a) What is transpiration?

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(a)(i) Describe how the rate of transpiration changes with light intensity.

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(b) The rate of transpiration is affected by many external and internal factors.

List these factors:-

External factors

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Internal factors

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d) Mention any four different ways how plants minimize transpiration.

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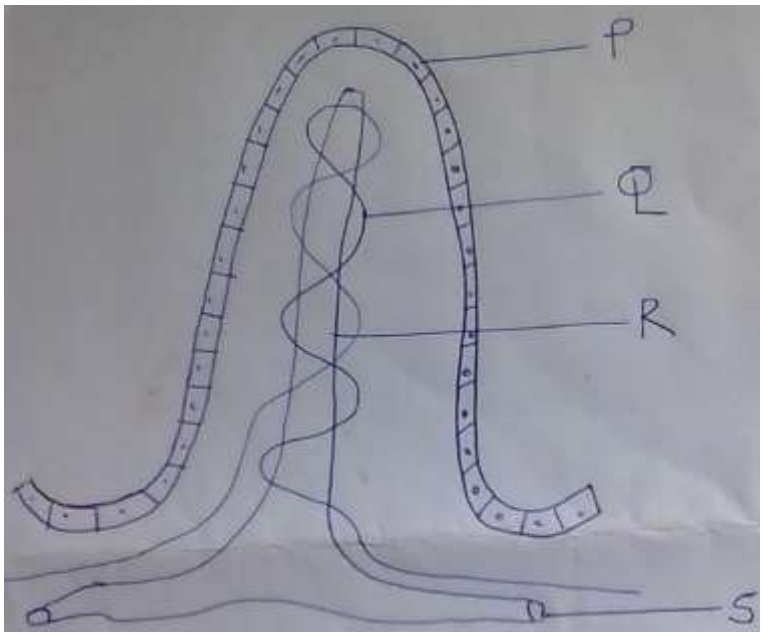
22. The diagram below shows a longitudinal section through a villus



(a) Give the names of the structures labelled

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Q.....

R.....

S.....

(b) What is the function of the villus

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(c) Give Three ways by which the villus is adapted/suited to its function

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23. (a)(i) What is meant by the term respiration?

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(ii)Write down the equation that represents a summary of the processes of aerobic respiration in (a)(i) above.

(b) Mention the differences between anaerobic respiration in plants and animals.

Anaerobic respiration in plants	Anaerobic respiration in animals

(d) Why do people after running feel pain in muscles and joints after vigorous exercise but after the exercise the pain disappears ?

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SECTION C

24. (a) Describe the structure of the heart. (7) Marks)

(b) Describe the events of the cardiac cycle in humans.(8Marks)

25. (a) Describe the process of digestion in the (2 Marks)
    i. Mouth
    ii. Stomach
    iii. Duodenum
    iv. Illeum

26. (a) Explain how flowers are adapted to wind pollination. (10 Marks)

(b) Outline the advantages of cross pollination. (5 Marks)

27 a) Define the following terms
    i. Complete dominance (01 mark)
    ii. Co-dominance (01 mark)

b) When pollen grains from a red flowered plant were dusted on the flowers of the white flowered plant, a pink flowered plant was obtained.
i) Using suitable genetic symbols show how the pink flowered plant can to be obtained.
(07 marks)
ii) What will be the genotypes and phenotypes of a cross between a pink flowered plant and white flowered plant? Show your working.
(06 marks)

END