

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

BOT II EXAMS 2018
S.3 BIOLOGY
Time: 2 hours 30 Minutes

Instructions:

Answer all questions in sections A and B.

Answer all questions from section C.

Answers to Section A should done by circling the best Objective.

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. 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. Boiling plant leaves in alcohol
16. Translocation means.....
A. Absorption of food in plants B. Translocation of water in plants
C. Translocation of food in plants D. Loss of water in plants
17. The respiratory surfaces of insects are
A. Gills C. Gill filaments
B. Tracheoles D. Cell membrane
18. 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
19. Which of these is nitrogen fixing bacteria?
A. Nitrobacter B. Nitrosomonas C. Rhizobium
D. Azotobacter
20. A plant tissue which is tubular, open-ended, lignified and thickened walls is:
A. Tracheid B. Xylem vessel C. Parenchyma D. Sieve tube
21. Which of the following are the causes of soil erosion?
(i) Deforestation (ii) Mono cropping
(iii) Crop selection (iv) Bush Burning
A. (i) and (iii) B. (i) and (ii)
C. (ii) and (iv) D. (i) and (iv)
22. Which one of the following parts of the alimentary canal works on fats chemically?

- A. Mouth B. Stomach C. Duodenum D. Colon
23. Which one of the following is the least important function of humus in the soil?
- A. Improving soil aeration B. Prevention of soil erosion
C. Water retention D. Increasing soil fertility
24. Which one of the following groups contains the largest number of organisms?
- A. Order B. Species C. Class D. Phylum
25. Fruits that split along only line of weakness are described as
- A. Follicles B. Legumes C. Achenes D. Capsules
26. The major difference between a seed and a fruit is that
- A. A seed has one seer while a fruit two.
B. A seed has a testa while a fruit has no testa
C. A seed stores food while a fruit does not.
D. A seed develops into a new plant unlike the fruit.
27. Which of the following vessels empties into the right atrium of the mammalian heart?
- A. Vena cava C. Pulmonary vein
B. Pulmonary artery D. Aorta
28. Which of the following are the main mechanism for uptake and transport of mineral salts by root hair and xylem respectively?
- A. Active transport and mass flow B. Diffusion and active transport
C. Diffusion and mass flow D. Mass flow and osmosis
29. The source of energy during photosynthesis is
- A. Sunlight B. Water C. Chlorophyll D. Carbon dioxide
30. A person of blood group A can safely receive blood from a person of blood group
- A. B and AB
B. A and O
C. A only
D. AB only

SECTION B

31.(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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32. (a) Outline the characteristics of the following blood cells

i. Red blood cells

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ii. White blood cells

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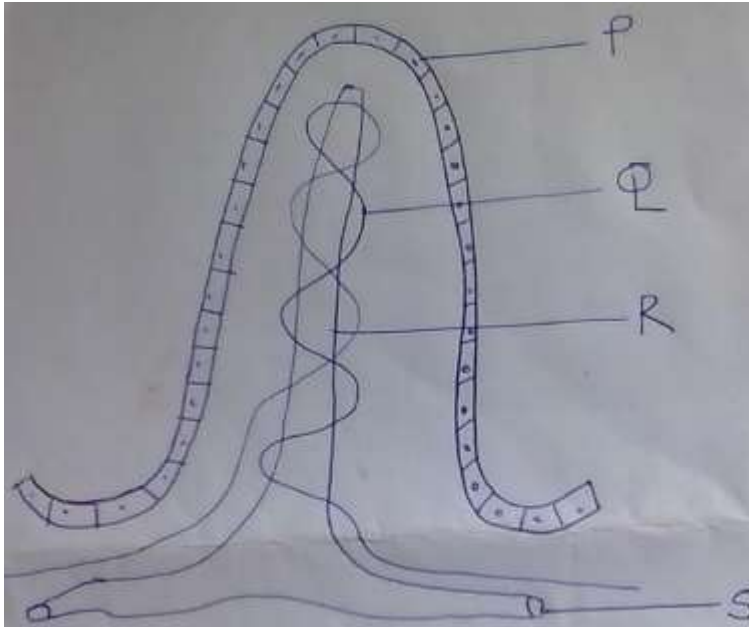
(b) How do white blood cells fight against diseases in the body

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33. 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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34. (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

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

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

36. (a)Describe the process of digestion in the (2 Marks)

- i. Mouth
- ii. Stomach
- iii. Duodenum
- iv. Ileum

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

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