

Name:.....

LAKESIDE SECONDARY SCHOOL

TERM TWO 2022

S.3 BIOLOGY TOPICAL TEST

TOPIC: TRANSPORT.

TIME: 2HOURS

INSTRUCTIONS;

This paper consists of **three** sections **A, B** and **C**

Answers section **A** by putting at the correct objective in the grid table below

Answer to section **C** should be written on answer sheets provided to you

SECTION A ANSWER GRID

1		11		21	
2		12		22	
3		13		23	
4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	

SECTION A

1. Which one of the following controls flow of blood through the veins
 - A. Valves
 - B. Pulse of the heart
 - C. Lumen of the vessel
 - D. Thickness of the muscles
2. Which one of the following is not an example of a disaccharide?
 - A. maltose
 - B. lactose
 - C. fructose
 - D. galactose
3. Which one of the following is not a component of carbohydrates?
 - A. Carbon
 - B. Oxygen
 - C. Sulphur
 - D. Hydrogen
4. A fat is made up of ?
 - A. Fatty acids
 - B. Fats and oils
 - C. Oils
 - D. Fatty acids and glycerol
5. Which one of the following is a property of a fully turgid cell?
 - A. the vacuole has maximum volume
 - B. there is no more absorption of water by the cell
 - C. the cell wall resists further expansion of cell vacuole
 - D. the cytoplasm is slightly separated from cell wall
6. Which one of the following takes place by the process of active transport in plants?
 - A. uptake of water
 - B. uptake of mineral salts
 - C. intake of carbon dioxide
 - D. Transpiration

7. Which one of the following structural adaptations of leaves is important for light absorption during photosynthesis?

A. Dense network of veins
leaf surface

B. large number of stomata on

C. broad and flat shapes of leaves
in spongy layer

D. larger intercellular air spaces

8. Which one of the following tissues has protective function in plant?

A. xylem

B. phloem

C. cambium

D. epidermis

9. Decrease in number of red blood cells could reduce the ability of blood to

A. clot B. transport oxygen C. destroy harmful bacteria D. distribute heat

10. Which one of the following sets of blood vessels carry blood containing the **least** amount of carbon dioxide and nitrogenous wastes respectively?

A. Renal artery and pulmonary artery

B. Vena cava and pulmonary artery

C. Pulmonary vein and renal vein

D. Renal artery and vena cava

11. Which one of the following blood vessels in the circulatory system **lacks** a pulse?

A. aorta

B. Pulmonary artery

C. Hepatic artery

D. Renal artery

12. The following blood plasma components are involved in blood clotting except

A. Water

B. Calcium

C. Prothrombin

D. Fibrinogen

13. A person of blood group A can be transfused with blood of

A. Group A only

B. Group A and O

C. Groups AB only

D. Groups A and AB

14. When a foetus receives antibodies from the mother through the placenta, it acquires
- A. Active immunity
 - B. Long-term immunity
 - C. Passive immunity
 - D. Artificial immunity
15. Which one of the following does **not** contribute to the movement of water from the root system to the leaves in a flowering plant?
- A. Root pressure
 - B. Cohesion forces
 - C. Transpiration pull
 - D. Atmospheric pressure
16. Which one of the following does not involve mass flow?
- A. Blood flow in the arteries
 - B. Uptake of food by the tapeworm
 - C. Movement of food and water in the gut
 - D. Transport of water and mineral salts by the xylem
17. Which of the following is not true about both the blood circulatory and lymphatic systems in mammals? The fluids contains
- A. Excretory products
 - B. Leucocytes
 - C. Plasma proteins
 - D. Dissolved food
18. Which one of the following qualities of the guard cells that contributes to their opening?
- A. Uneven thickened walls
 - B. Inner walls being less elastic than other walls
 - C. Presence of chloroplasts
 - D. Presence of vacuoles
19. Which one of the following is the correct route taken by blood on leaving the heart, in a single circulatory system?
- A. Gills → body → heart
 - B. Body → gills → heart
 - C. Gills → heart → body

- D. Body → heart → gills
20. Which one of the following blood conditions would cause least ventilation rate in humans?
- A. Low carbon dioxide and high oxygen concentrations
 - B. High carbon dioxide and oxygen concentrations
 - C. Low carbon dioxide and oxygen concentrations
 - D. High carbon dioxide and low oxygen concentrations
21. Which one of the following animals has a double circulatory system?
- A. Fish
 - B. Octopus
 - C. Frog
 - D. Squid
22. Which one of the following is not the method by which antibodies attack antigens?
- A. Engulfing
 - B. Agglutination
 - C. Lysis
 - D. Adsorption on surface
23. Which one of the following pairs of animals has an incomplete double circulatory system?
- A. Rabbit and toad
 - B. Toad and lizard
 - C. Pigeon and monkey
 - D. Snake and whale
24. The disadvantage of parallel flow system during gaseous exchange in some fish is the
- A. Slow speed of blood
 - B. Low blood volume
 - C. Low oxygen uptake by blood
 - D. Low water volume over the gills
25. Possession of lungs in amphibians is an adaptation to live
- A. Both in water and on land
 - B. In moist areas
 - C. In water

- D. On dry land
26. Changes in the level of carbon dioxide in mammalian blood is detected by the
- A. Carotid and aortic bodies
 - B. Medulla oblongata
 - C. Cardio-vascular centres
 - D. Hypothalamus
27. Which blood vessels are able to change their resistance to blood flow, regulating distribution of blood flow to organs?
- A. Veins
 - B. Arteries
 - C. Arterioles
 - D. Capillaries
28. Which organ in the body contains cardiac muscle?
- A. Gizzard
 - B. Diaphragm
 - C. Oesophagus
 - D. Heart .
29. Which one of the following changes brings about opening of stomata in plant leaves?
- A. Fall in the pH of the intercellular spaces
 - B. Synthesis of starch
 - C. Rise in levels of carbon dioxide in the intercellular spaces
 - D. Conversion of starch to sugar
30. Which of the following statements about immunity is incorrect?
- A. Heat killed bacteria become antibodies when injected into an animal
 - B. Antibodies are special proteins
 - C. Antibodies are produced against specific antigens
 - D. Antigens can be molecules on a foreign microbe

SECTION B

31. Data below shows results of red blood cells counts carried out on blood of a mountain climber.

Increase in altitude in metres	Red blood cells X 10 ¹² per litre of blood
0	4
1000	4.2
2000	5.2
3000	6.4
4000	7.6
5000	8.8

a) What is the effect of the increase in altitude on the number of Red blood cells of the climber? (01mark)

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ii) Why is one required to climb to higher altitude gradually over a number of days rather than in a few days? (03 marks)

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iii) Describe how the body deals the process of blood clotting.

(06 marks)

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b) State structural differences between Red blood cells and White blood cells.

(02 marks)

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32(a). Define the term transport in living organisms (02marks)

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(b). state four significance of transport in living things (04marksd)

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(c). briefly explain why large organisms need a transport system while small organisms do not (04marks)

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33(a). What is meant by osmosis (02marks)

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(b)Outline the differences between diffusion and osmosis (05Marks)

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c). Mention the significances of osmosis to plants and animals (03marks)

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SECTION C

Answer two questions in this section

34.(a)(i)What is transpiration pull? (02 marks)

- (ii) How does transpiration occur in a plant? (10 marks)
(b) Explain the significance of transpiration to a plant (03 marks)

35. (a) Define the term diffusion (02marks)
(b). Explain the factors that affect the rate of diffusion (05marks)
(c) .state the role-played by diffusion in living organisms (03marks)
(d) .briefly explain the process of stomatal opening and closer (05mks)

36. (a) what is immunity(02marks)
(b) Explain that two ways that white blood cell defend the body against infections (06marks)
(c). State the difference between natural immunity and artificial immunity (04marks)
d). Identify the where red blood cell, white blood cell and plasma are formed (03marks)

37. (a) What is blood transfusion (02marks)
(b). when someone of blood group A donates blood to an individual with blood group B, death is most likely to occur explain (05maks)
(c) State the difference between arteries and veins (05marks)
(d). outline the material that make up the body fluids (03marks).

End.