



Dr. Blosa Science

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NAME:.....

STREAM:.....

SENIOR FOUR

553/1

BIOLOGY

PAPER 1

EXAM 13

TIME: 1 HOUR 30 MINUTES

Instructions:

Answer all questions in sections A, B and C.

Section A:

Answers should be written as letters in the corresponding column in the table below

Section B and C:

Answers should be written in the spaces provided

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

- At the beginning of a race the hormone released into the blood stream of the athlete will most likely be
A: ADH B: Insulin **C: Adrenaline** D: Thyroxin
- Which one of the following animals has two lateral lines?
A: Tadpole B: Snake **C: fish** D: lizard
- The most sensitive part of the tooth is in the
A: root **B: pulp** C: dentine D: Enamel
- Dwarfism may be caused by the lack of
A: Adrenaline **B: growth hormone** C: insulin D: Grafian follicle
- Which one of the following sensitive cells will appreciate coloured objects?
A: Otoliths B: The rods C: Macullae **D: The cones**
- A knee jerk is a
A: A conditioned reflex action **B: Reflex action**
C: voluntary action D: Tactic action
- After a car accident, the driver would not maintain his balance although he was conscious. It is possible that the damaged part was
A: cerebrum B: medulla oblongata **C: cerebellum** D: Cochlea
- Nastic movement is practiced by
A: plants and animals **B: plants only**
C: Animals only D: people who walk barefooted

9. Growth of plant roots towards water is called positive
 A: thigmotropism **B: hydrotropism**
 C: geotropism D: phototropism
10. Which one of the following is not part of the ear structure?
 A: Ossicle **B: Auricle** C: Ampulla D: Tympanum
11. The ability of an organism to maintain a stable and constant internal environment is called
A: Homeostasis B: Osmoregulation
 D: Disease control D: appropriate response
12. Which one of the following is not a waste product?
 A: carbon dioxide B: water
C: faeces D: Nitrogenous wastes
13. Which one of the following is false? The main excretory organs in the mammals are:
A: kidney B: lungs C: skin D: Anus
14. Urine contains no glucose since
 A: the nephron is impermeable to glucose
B: Glucose passes back into the blood stream
 C: the kidney converts glucose to urea
 D: Glucose is used for respiration before reaching the collecting duets.
15. Which part of the brain is the temperature regulating center?
A: Hypothalamus B: cerebrum C: cerebellum D: Pituitary body
16. Where in the kidney nephron does re-absorption of sugar occur?
A: first coiled part B: second coiled region
 C: Ascending limb of Henle's loop D: Descending limb of Henle's loop
17. Which one of the following would lead to excretion of large quantities of sugar in urine of a man?
A: Removal of his pancreas B: Drinking large quantities of water
 C: A hot day D: A meal rich in carbohydrates
18. Which one of the following does not cause an increase in human body temperature?
 A: constriction of peripheral blood vessels B: shivering of muscles
 C: increased metabolic rate **D: dilation of deep lying blood vessels**
19. Which of the following substances are excretory products of animals?
 1. Carbon dioxide
 2. uric acid
 3. urea
 4. ammonia
A: all of them B: 2 and 3 C: 2,3 and 4 D: 1, 2 and 3
20. What is the most probable main end product of nitrogenous excretion in the crocodile?
 A: Ammonia B: Urea and Ammonia
 C: urea and uric acid D: Uric acid

Lizards, snakes, birds and insects excrete mostly uric acid but crocodiles and alligators excrete mainly ammonia though they are reptiles.

21. Phagocytosis is a process whereby
A: White blood cells ingest and destroy bacteria
 B: white blood cells cause the bacteria to stick together
 C: white blood cells dissolve the outer coats of invading bacteria and destroying them
 D: antibodies fight antigens
22. Which of the following is not a pigment?
 A: Hemoglobin B: Melanin C: carotene **D: Tocopherol**
23. What is the possible percentage composition of blood to body weight?
 A: 45% B: 55% **C: 10%** D: 3%
24. The blood vessel in man with capillaries at both ends is the
 A: pulmonary artery **B: Hepatic portal vein**
 C: Hepatic artery D: Hepatic vein
25. The blood constituents involved in preventing loss of blood, when the skin is injured are
 A: platelets, globulin and calcium **B: Prothrombin, fibrin and platelets**
 C: fibrin, glycogen and prothrombin D: Fibrinogen, hemoglobin and calcium
26. Red corpuscles are manufactured in the
 A: Thyroid gland **B: marrow of bones**
 C: liver D: Islets of Langerhans
27. Some of the red cells in some people's blood are sickle-shaped. Their presence in the blood
 A: traps malaria parasite
B: causes sickle cell anaemia
 C: causes pain in skeletal muscles
 D: Helps the blood to carry oxygen more efficiently.
28. Oxygen is mainly transported in the
 A: plasma B: Platelets C: Leucocytes **D: Erythrocytes.**
29. In the process of blood clotting, thrombin acts as an enzyme to bring about conversion of
A: fibrinogen to fibrin B: fibrin to fibrinogen
 C: prothrombin to thrombokinase D: thrombokinase to prothrombin
30. People who travel on an open lorry on a cold misty morning likely to experience:
A: Vasoconstriction B: vasodilation
 C: palpitation D perspiration

SECTION B:

31. The graph below shows the body temperature of animal A, B, measured over a 24 hour period

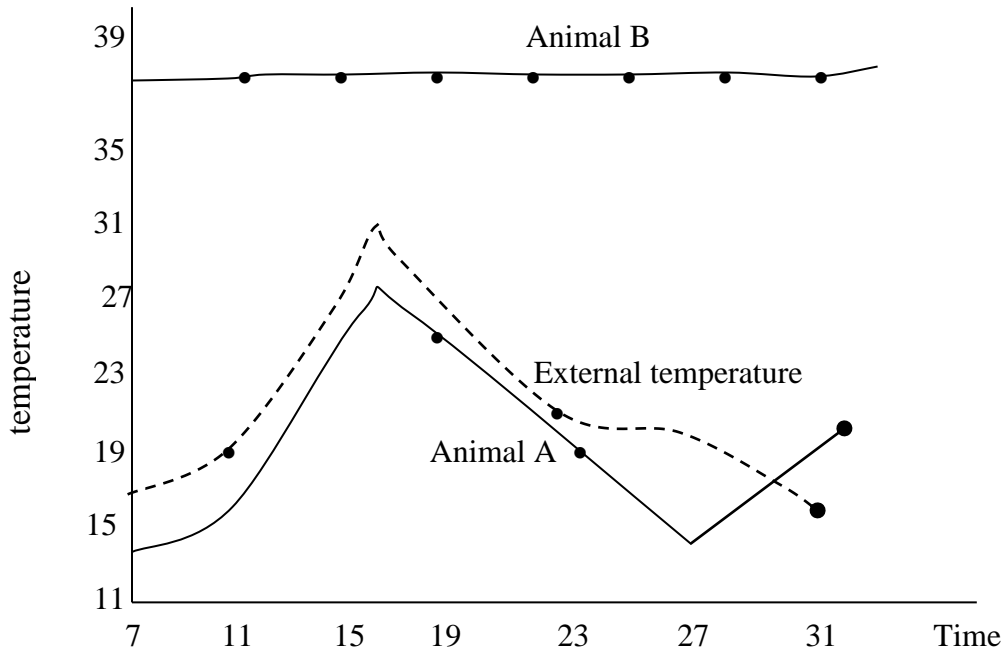


Fig 1

(a) What happens to the body temperature of animal A as the external temperature increases?
The body temperature of animal A increases as the external temperature increase.

(b) What happens to the body temperature of animal B as the external temperature increases?

The body temperature of animal B remains almost constant when the external temperature increase.

(c) From the graph what can you deduce about the activity of A and B at night time?

A is inactive at night because its body temperature falls

B is active because its body temperature remains high

What advantages does this give one animal over the other in respect of night activities?

Animal B can survive in places of varying temperatures while animal A can survive only in hot places

SECTION C

32. Explain what happens to a piece of plant tissue when put in a strong salt solution.

It loses water by osmosis to the solution, loses its turgidity and becomes soft because the salt concentration of its cells is lower than that of the external solution.