

JOINT INTERSCHOOLS EVALUATION TESTS JISET 2009

1. **State** how each of the following parts of the mammalian ear are adapted to their function.
 - a) Cochlea (2mks)
 - Pinna (2mks)
2. **Give two** ways in which endotherms lose heat to the external environment. (2mks)
3. **What** is natural selection? (3mks)
4. **State three** evidences that support the theory of organic evolution. (3mks)
5. The table below shows description of sizes of glomeruli and renal tubules of two animals, which are living in different environments.

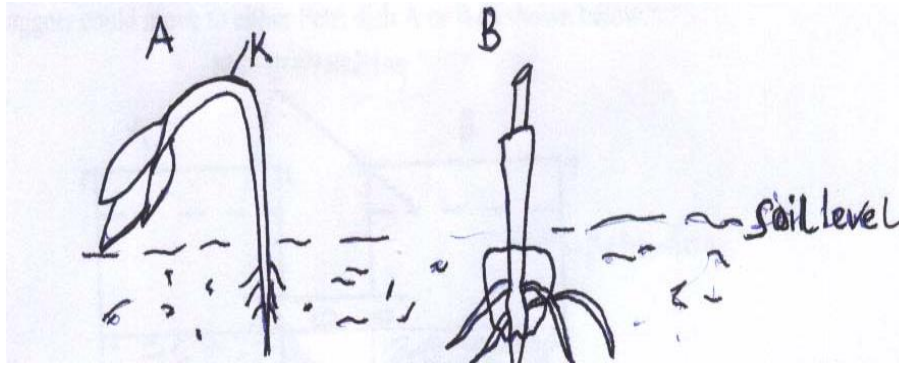
	Animal x	Animal y
Glomeruli	Large and few	Small and many
Renal tubules	Short	Long

- a) **Name** the likely environment in which each animal lives. (2mks)

X:

Y:
- b) **Suggest** the main nitrogenous waste produced by animal Y (1mk)
6. A cell was found to have the following under a light microscope.
 Cell membrane, irregular in shape and very small vacuoles.
Identify the type of cell above. (1mk)
7. (a) **State** what would happen to a cell if its nucleus was removed. (1mk)
Reason

- (b) **Give** the function of nucleolus. (1mk)
8. (a) **Name** the products of the light reaction stage. (2mks)
- (b) **State** the site where the following stage of photosynthesis takes place. (2mks)
 Dark stage
 Light stage
9. (a) **Name two** nutrients that do not require digestion before they are absorbed. (2mks)
- (b) **What** is assimilation? (1mk)
10. (a) **Give** a reason why the left ventricle muscles are thicker than the right ventricle muscles. (1mk)
- (b) **State** the form in which carbon (IV) oxide is transported in the blood. (2mks)
11. The diagrams below represent a stage of growth in two different seeds.



(a) **Identify** the type of germination exhibited by seedlings A and B and give a reason for each identity

A

Reason

B

Reason

(b) **State** the function of the part labeled K. (1mk)

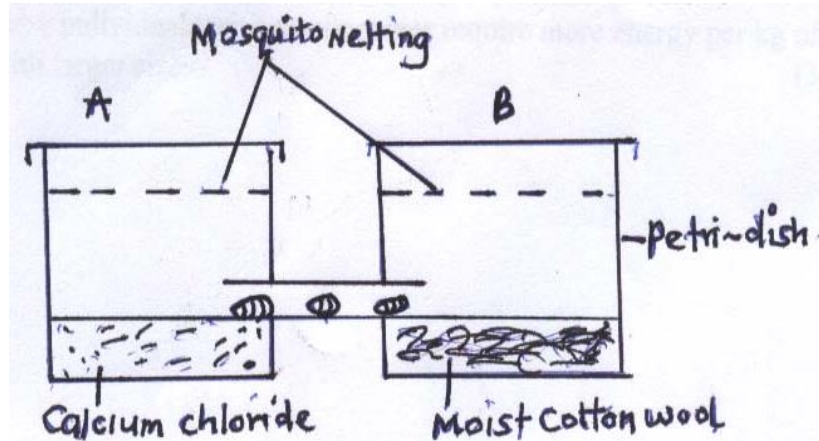
12. **Explain** how the following adaptations reduce transpiration in xerophytes

(a) Sunken stomata (2mks)

(b) Thick waxy cuticle (1mk)

13. The following experiment was set up in a chamber made from two connected Petri dishes.

Housefly maggots were introduced at the centre of the chamber, so the maggots could move to either Petri dish A or B as shown below.



(a) **Name** the type of response being investigated in the set up. (1mk)

(b) **State** the survival value of the response named in (a) above. (1mk)

(c) **Give** the role of calcium chloride in the experiment above. (1mk)

14. (a) **What** is sex linkage? (2mks)

(b) **Name two** sex-linked characteristics in humans. (2mks)

15. **Name** the mechanisms that hinder self —fertilization in flowering plants. (3mks)

16. **Explain** why individuals with smaller sizes require more energy per kg of body weight than those with larger sizes? (3mks)

17. **State** the importance of placenta and amniotic fluid during pregnancy.

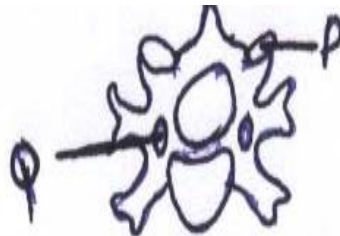
Placenta (2mks)

Amniotic fluid (1mk)

18. **Distinguish** between the two patterns of evolution:
 (a) Divergent and convergent evolution. (2mks)
 (b) **Why** was Lamark's theory of evolution rejected? (2mks)
19. **Name** the meristematic tissues responsible for:
 (a) Primary growth (1mk)
 (b) Secondary growth in plants (1mk)
20. The diagram below represents an organ from a bony fish, **study** the diagram and answer the questions that follow.



- (a) **State** the functions of each of the following A and B
- (b) **How** is the structure labeled C adapted to its function? (1mk)
21. **Give** the functions of the following parts of a light microscope (2mks)
 (i) Objective lens
 (ii) Condenser
22. During a strenuous exercise, the chemical process represented by the equation below takes place in human muscles.
- $$\text{C}_6\text{H}_{12}\text{O}_6 \longrightarrow \text{Substance x} + 150\text{KJ}$$
- (a) **Name** the process represented above (1mk)
- (b) **What** is glycolysis? (1mk)
23. During estimation of cell sizes using a light microscope, a student found out the diameter field of view to be 2.7mm and diameter of field of view had 9 cells. The magnification was x50. **Calculate** the actual length of one cell in microns (3mks)
24. **State** the functions of the following fins of a bony fish
- (i) Dorsal fin (2mks)
- (ii) Pelvic and pectoral fins (2mks)
25. The diagram below represents the anterior view of a vertebra study it and answer the questions that follow



- (a) (i) **Name** the identity of the vertebra (1mk)
 Identity
- (ii) **State** the function of each of the following structures P and Q (2mks)
 P
 Q
26. (a) **What** is transpiration? (1mk)
 (b) **Give** the importance of transpiration in green plants. (2mks)
27. **Distinguish** between habitat and ecological niche.