

RECEPTION, RESPONSE AND CO-ORDINATION

PAST KCSE QUESTIONS ON THE TOPIC

1. State one structural and one functional differences between motor and sensory neurons

Structural differences

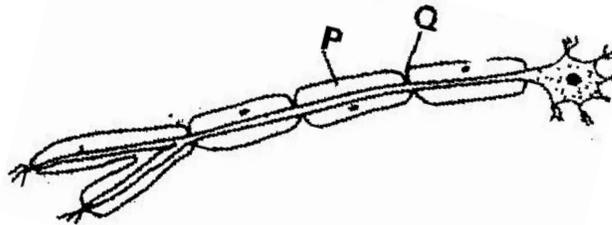
Functional differences

(2 marks)

2. The table below shows two mammalian hormones. For each hormone, state the site of production and its function in the body.

Hormone	Site of production	Function
Oestrogen		
Aldosterone		

- 3.



- (i) With an arrow, indicate on the diagram the direction of the impulse through the neurone (1 mark)
- (ii) State the functions of parts labeled P and Q (2 marks)
4. (a) How are structures of the human eye adapted to their functions (14 marks)
- (b) State three defects of the eye and how each can be corrected (6 marks)

5. State the changes that occur in a nerve axon to produce an action potential

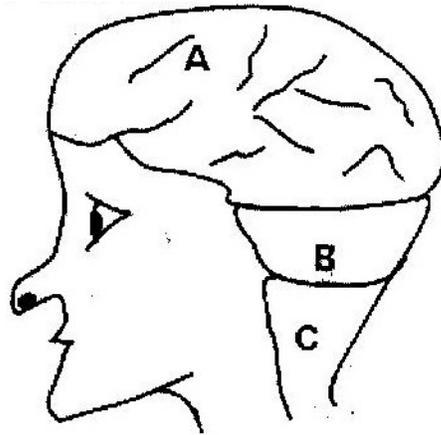
(3 marks)

6. In an accident a victim suffered brain injury. Consequently he had loss of memory.

Which part of the brain was damaged?

(1 mark)

7. The diagram below shows surface view of a human brain



(a) Name the parts labeled B and C

(2 marks)

(b) State three functions of the part labeled A

(3 marks)

(c) State what would happen if the part labeled B was damaged.

(1 mark)

8. What is the function of the following cells in the retina of the human eye?

(2 marks)

(a) Cones

(b) Rods

9. (a) State the functions of the following parts of the mammalian ear

(i) Tympanic membrane

(3 marks)

(ii) Eustachian tube

(1 mark)

(iii) Ear ossicles

(2 marks)

(b) Describe how semi- circular canals perform their functions (2 marks)

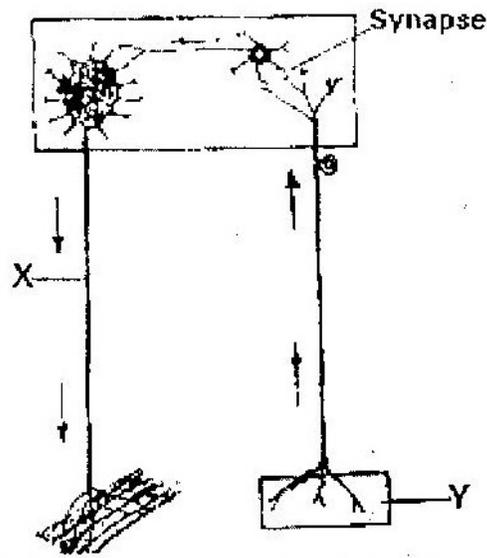
10. State the importance of tactic response among some members of Kingdom Protista?

(1 mark)

(a) What name is given to response to contact with surface exhibited by tendrils and climbing stems in plants? (1 mark)

(b) State three biological importances of tropisms to plants (3 marks)

11. The diagram below represents a reflex arc in human



(a) Name the parts labeled X and Y (2 marks)

X _____

Y _____

(b) Name the substance that is responsible for the transmission of an impulse across the synapse (1 mark)

12. (a) State the function of the ciliary muscles in the human eye. (1 mark)

(b) State two functional differences between the rods and cones in the human eye

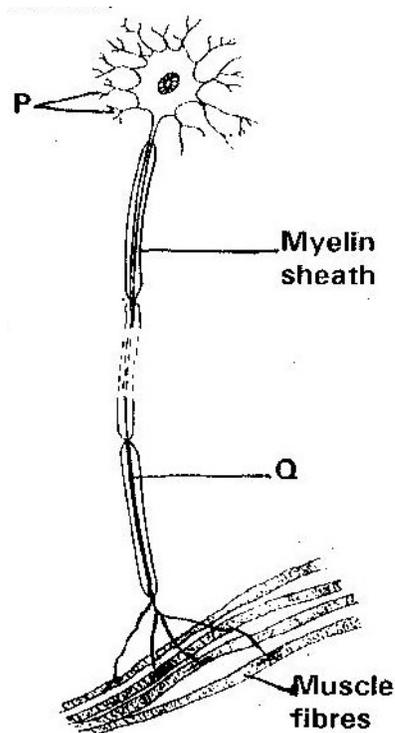
(2 marks)

13. State the function of each of the following parts of human ear (4 marks)

- (a) Ear ossicles
- (b) Cochlea
- (c) Semi- circular canals
- (d) Eustachian tube

14. (a) Where in the human body are relay neurons found? (1 mark)

(b) The diagram below represents a neurone

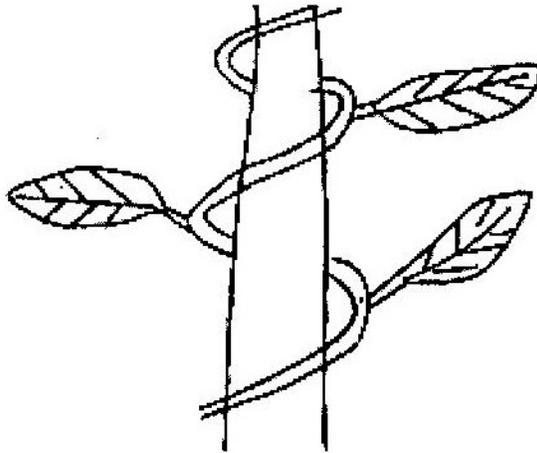


(i) Name the neurone (1 mark)

(ii) Name the parts labeled P and Q (2 marks)

15. (a) Name the hormone that is responsible for apical dominance (1 mark)
- (b) What is thigmotropism? (1 mark)
16. Describe the structure and functions of the various parts of the human ear (20 marks)
17. Nocturnal animals such as the owl are capable of seeing fairly well at night
- What two retinal adaptations have made this possible? (2 marks)
18. State two functions of the human ear? (2 marks)
19. State four differences between co- ordination of the human eye's internal response to light and that of tropic movement of the flowering plant in response to light. (4 marks)

20. The figure below shows a stem of a plant growing round a tree trunk



(i) What is the name of the response, which causes the twisted growth?

(1 mark)

(ii) Explain how the twisting process is accomplished (2 marks)

(iii) Identify the state of leaves if the plant is autotrophic (2 marks)

21. Euglena is positively phototactic. Of what biological significance is this characteristics?

(1 mark)

22. State the function of acetylcholine (2 marks)

23. Where in the human body is the relay neurone located? (1 mark)

24. State three effects of nicotine to human health (3 marks)

25. state the part of the eye involved in

(i) Colour vision

(ii) Maintaining shape of the eyeball

(iii) Change in diameter of the lens