

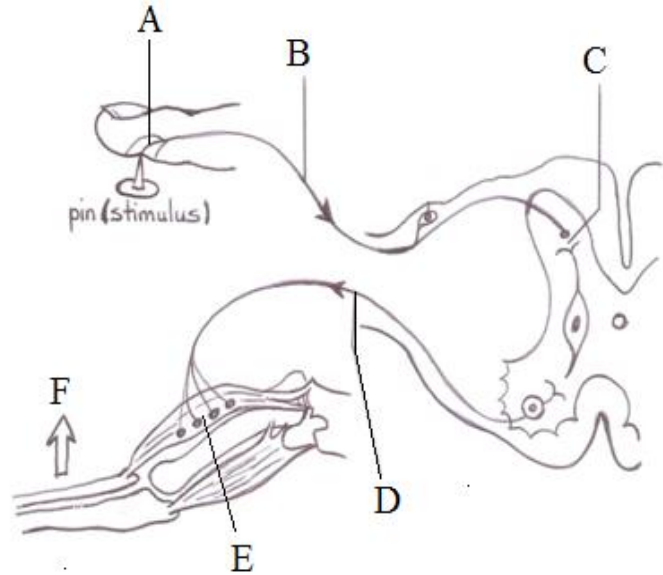
1. Imagine what it would be like to travel along the nerve cells of the body to the brain and back. Shrink **yourself** to the size of a stimulus of heat from the surrounding air in your room at home and take a trip through the nervous system. Write a description of the ride and the 'sights' you would see in **first person**. Indicate what the person would do to alleviate the condition of heat (stimulus) in the surroundings air in your room. (10pts)

2. The diagram below shows a simple reflex arc.

a) Identify the structures indicated by the following letters: A, D and E. (3pts)

b) How does the passage of the impulse along B differ from that across C? (3pts)

c) The diagram represents a simple reflex arc, which is one of the simplest processes in the human nervous system. State **FOUR** reasons why this is important to man? (4pts)



3. The skin is a very important organ which helps regulate temperature in the body.

a) Explain the behavioral changes that an animal such as a lizard need to undertake in the morning, noon and in the evening in order to maintain an adequate body temperature. What difference is there between the lizard's temperature control to that of humans and the temperature in the environment? (2pts)

b) Fully describe **TWO** possible physiological mechanisms that enable the human skin to **conserve** and **lose** heat. (4 pts)

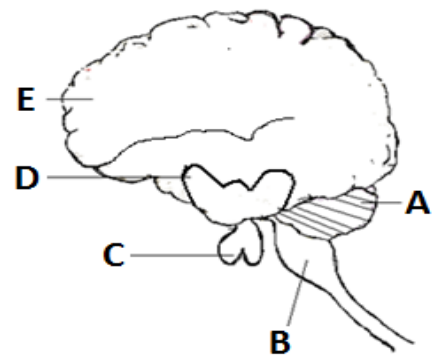
c) State **TWO** ways how human can help in keeping their bodies warm and **TWO** ways how they can help keep their bodies cool. (4pts)

4. Use the diagram of the brain to the right to answer the following questions.

a) Label the **TWO** parts and then state **ONE** function (3 pts)

b) Draw the diagram of the brain and indicate the sites centers for the following. (4pts)

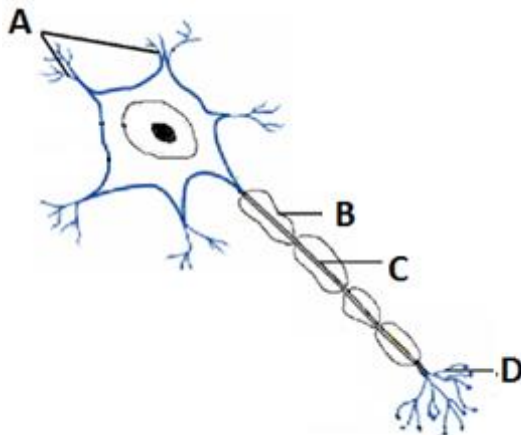
- i) Arm
- ii) Hearing
- iii) Intelligence
- iv) eyes



c) Copy and complete the table below.

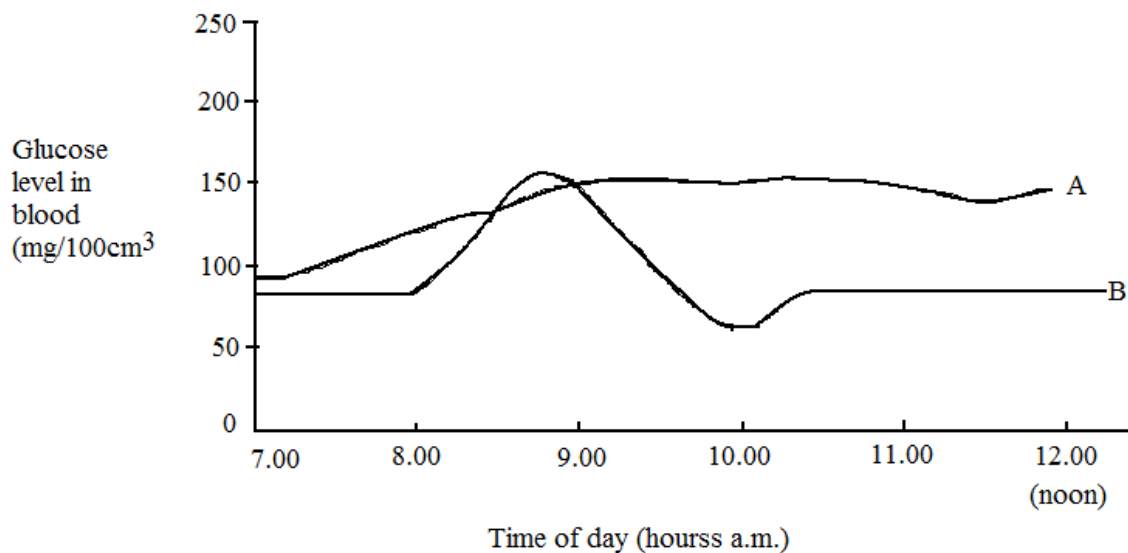
Sense organ	Stimulus to which it Responds (1pt each)	An example of its importance describing an everyday activity that uses the sense organ and explain how it is used (2pts)
1. Eye		
2. Ear		

b. Label the parts A, B, C and D.



5. Use the graph below to answer the following questions.

Level of glucose in the blood



- Identify which line graph represents blood glucose level of a **normal** and a **diabetic** person. (2pts)
- Describe the changes that take place in the blood of a normal person after a meal rich in sugars. Describe how the pancreas regulates the blood glucose levels. (5 pts)
- Why is it important that the blood sugar levels be kept constant? (2pts)
- What is diabetes? What are the causes of diabetes? (4 pts)
- Describe **TWO** symptoms of diabetes. (2pts)