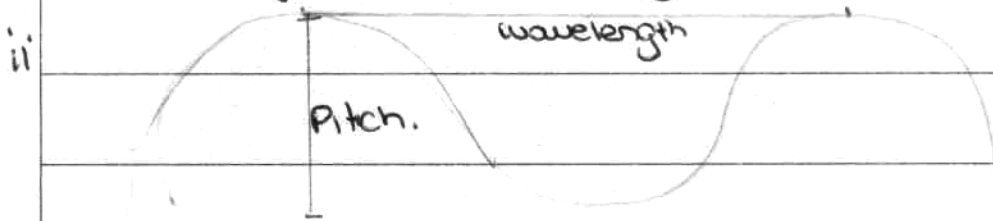




28. communication.

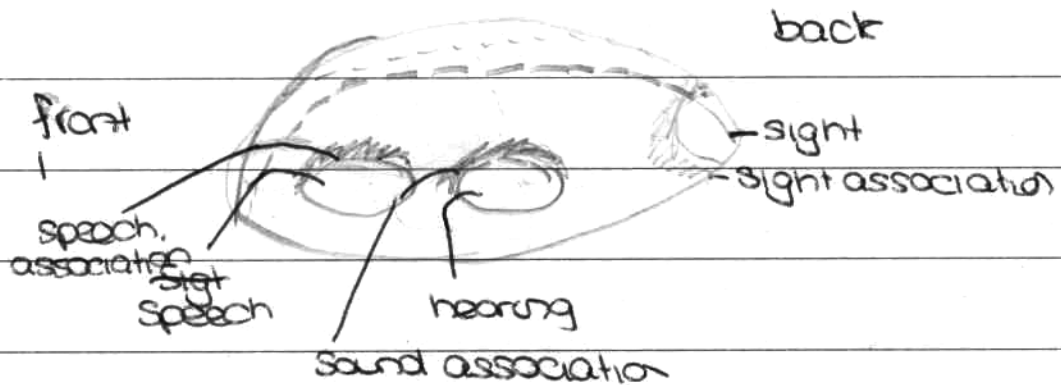
- a) The organ of Corti is located in the cochlea. It contains hair cells which are the sound receptors. The function is to ~~identify~~ pass messages from the hair cells triggered by sound frequency to the auditory nerve & from there to the brain.



wavelength is the length between waves it determines the sound ^{is how many wavelengths pass a certain point in 1 minute} frequency the closer the wavelengths the more high ^{or high} pitch ~~frequency~~ the sound. The longer the more ^{or deep} low the pitch.

- iii) 2 structures are the larynx and vocal cords in mammals which are located in the throat. They vibrate when air is pushed through them & sound is made by the throat, palate & nasal cavity. and in some insects rubbing the abdomen produces ^{or rubbing} sound or flapping wings such as grasshoppers, cicadas ~~etc.~~ and other insects produce sound.

- bi) The medulla is the middle of the brain, it sits just under ~~the~~ and in the brain, the spinal cord is attached to it. the cerebrum is the main grey matter, the main part of the brain. It makes up the bulk, it is the big part. The cerebellum is the ~~3~~ third piece of the brain is smaller & is situated at the back.



- ci on other sheet
- ii as the thickness of the lens decreases the focal length increases
- iii when the eye is focused on an object far away the lens is pulled thin & flat ^{by the ciliary bodies}. As the graph shows the thinner the lens the further you can see so for distances the lens is thin. When we are focused on an object close to us the lens becomes thicker and more bulgy this is because the focal length is shorter. The thicker the lens the shorter the distance.

d. rods - 125 million cones - 6 million
in the human eye.

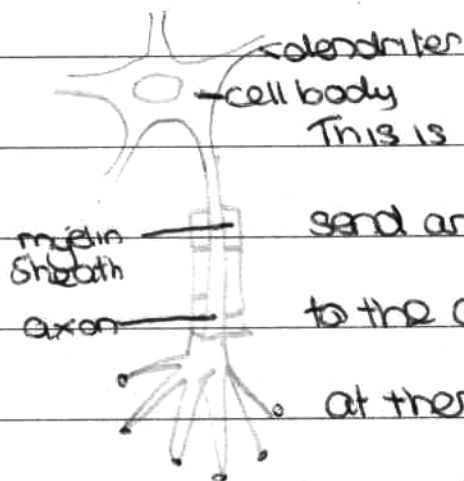
The diagram shows two simple drawings of photoreceptor cells. The one on the left is a rod, which is wider at the base and tapers to a point. The one on the right is a cone, which is wider at the top and tapers to a point at the base.

They contain pigments

rods have rodopsins which are light sensitive but are for black & white

cones contain photopsins, 3 types green, blue & red, eye can see colours within the visible spectrum of 380-750

These rods & cones are light receptors. The pigments absorb the image they receive by ~~these~~ the colours. This triggers electrochemical reactions all the way to the brain.



This is a basic nerve cell. The rods & cones

send an electric pulse down the dendrites

to the axon down to the axon endings.

at these endings ~~are~~ are vesicles containing chemicals. These chemicals ^{are} released across

the synapse (space between axon and next nerve dendrite) to the dendrite

where the chemical signal becomes

electrical again thus electrochemical.

The rods & cones synapse with other nerve cells, which become like those in the drawing which go to the brain. Because the pulse is electric it travels very fast.

The process is the ~~image~~ light enters the pupil, is focused by the lens and the image hits the retina. It is focused onto a spot called the fovea which contains most of the

cones which is why we can see colour better than black & white even though there are more rods than cones. The rods & cones in the retina absorb the different colours of the spectrum. The receptors synapse with other nerves and a message travels to the brain.

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Biology

Q 28

Communication

This page is to be detached, completed and attached to the inside front cover of your writing booklet for the option question you have attempted.

