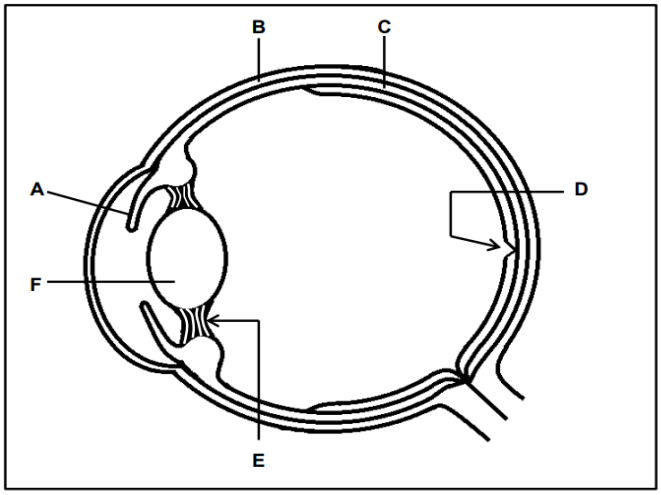
Diagnostic Report 2021

2.2 The diagram below represents the structure of the human eye.



2.2.1 Identify part **C**. (1)

• In Q2.2.1 some candidates confused the Choroid in the eye with the Chorion in the developing foetus,

2.2.3 State why the clearest image will form when light rays fall on part **D**. (1)

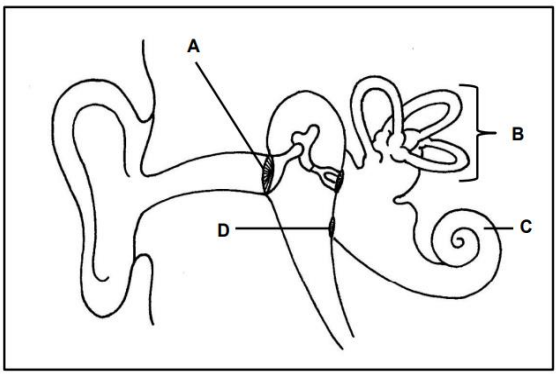
• In Q2.2.3 candidates needed to state why the yellow spot had the clearest image. It must be noted that the yellow spot consists of cones only and therefore has the highest concentration of cones. There are no rods in the yellow spot. If the candidates answered rods and cones are in the highest concentration they were not awarded a mark. Photoreceptors were also not accepted as an alternative for cones as it implies both rods and cones. **((D/the yellow spot) has the highest concentration of cones)**

2.2.4 Explain ONE way in which part **B** is structurally different from part **F**. (4)

• In Q2.2.4 some candidates wrote a comparison of the functions of parts B (sclera) and F (lens), rather than a comparison of the structure. Candidates also lost marks as their comparisons did not refer to the same structural feature. If a candidate stated that B is inelastic then they should state that F is elastic. If they wrote B is elastic and F is transparent the two statements did not compare the same feature.

(**Part B/sclera is opaque/does not allow light to pass through/ white** – part F/lens is transparent/allows light to pass into the eye OR –

Part B/sclera is non-elastic/maintains the shape of the eye - part F/lens is elastic/able to change its shape



(2022)

3.3.1 Identify part C.

3.3.2 State ONE function of: (a) Part D (b) The receptors found in part C **(well-answered)**

3.3.3 Explain why a build-up of ear wax at part **A** may result in temporary hearing loss. (2)

• In Q3.3.3 most candidates assumed that the build-up of wax was in the auditory canal as was the case in previous question papers. This question, however, referred to a build-up of wax at the tympanic membrane. Candidates referred to the inability for sound waves to pass through to the tympanic membrane, rather than the inability of the tympanic membrane to vibrate.

3.3.4 A grommet is a small device that allows the air to move into and out of the middle ear. This prevents pressure build-up in the middle ear.

Explain how the use of grommets in the treatment of middle-ear infections prevents hearing loss. (4)

• Q3.3.4 was very poorly answered by most candidates. The understanding of various disorders and their treatments was an area that was unfamiliar to most candidates. • **- Middle ear infections cause fluid build-up in the middle ear⎫ - which can block the Eustachian tube⎫ - The grommet will release the pressure⎫ that will build up in the middle ear/ drain the fluid from the middle ear - The pressure on either side of the tympanic membrane is equalised⎫ - preventing the tympanic membrane from rupturing⎫ and - allowing the ossicles to vibrate freely⎫**

NB

Candidates were unable to distinguish between the stimuli in each division of the ear. They used the terms sound waves, vibrations and pressure waves interchangeably.

When covering the process of hearing, teachers must emphasize or stress the point that sound is in the form of waves (in the outer ear); vibrations (middle ear) and pressure waves (inner ear), which are then converted into impulses.

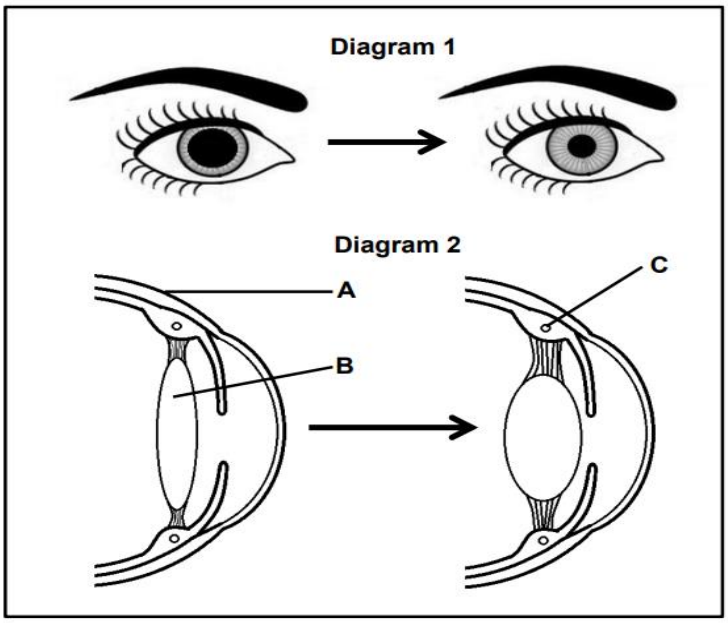


Diagram 1
Diagram 2
A
B
C