Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

A: **bitemporal hemianopia**

B: **right homonymous hemianopia**

C: **blindness in the right eye**

2.2

$-1 \div 0.5$

$= -2$ **D** (a concave lens)

2.3

Weber goes to the **left** ear

left Rinne: bone louder than air

right Rinne: air louder than bone (normal)

2.4

signals from the left optic nerve go to the brainstem on both sides

each side sends signals out through its oculomotor nerve to its own pupil

3.1

(a) **bitemporal hemianopia**

(b) fibres from the nasal half of each retina cross at the chiasm; these see the outer (temporal) fields, and the tumour presses on them

(c) fibres from the lower nasal retina, which see the upper fields, cross at the lower part of the chiasm, nearest the tumour

(d) **cabergoline** (or bromocriptine)

(e) dopamine normally switches off prolactin cells; the drug acts like dopamine, so less prolactin is made and the cells shrink

3.2

(a) **left homonymous hemianopia**

(b) the macular area at the occipital pole has a second blood supply, from the middle cerebral artery, so it survives

(c) on his **right** (the side he can see)

(d) yes: the reflex fibres leave the optic tract before the thalamus and cortex

3.3

(a) **high** frequencies; they are sensed at the base of the cochlea, whose hair cells are damaged first

(b) to the **left**

(c) bone louder than air

(d) 40 dB more, and every 10 dB is 10 times: $10^4 =$ **10 000 times**

(e) **Dix–Hallpike** test; **Epley** manoeuvre

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