## 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: **Broca** (expressive)

B: **Wernicke** (receptive)

C: **conduction**

**2.2**

$7.5 \times 60 = 450$ min; $450 \div 90$

$=$ **5** cycles

**2.3**

early: **N3** (deep, slow-wave sleep)

late: **REM** sleep

**2.4**

riding a bicycle: **procedural**

capital of France: **semantic**

last birthday: **episodic**

**3.1**

(a) **Broca** (expressive) aphasia

(b) the left **inferior frontal gyrus**

(c) the motor cortex for the arm lies next to Broca area in the same artery territory; its fibres cross, so the right side is weak

(d) yes: he understands, so he knows and is often frustrated

(e) short, simple questions he can answer yes or no; picture boards, gestures and extra time

**3.2**

(a) **thiamine** (vitamin B1)

(b) not being able to form new memories after the illness starts

(c) **confabulation**

(d) breaking down glucose uses up thiamine; glucose first can bring on Wernicke encephalopathy



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**3.3**

(a) **5**

(b) **N3** (deep sleep)

(c) it stops people acting out their dreams; if it fails they move and can hurt themselves (REM sleep behaviour disorder)

(d) the body clock (suprachiasmatic nucleus) is set for waking in the day; daylight suppresses melatonin

(e) **orexin** (hypocretin); cataplexy is sudden muscle weakness brought on by emotion such as laughter