

Question 18 (Answer: **D**)

- A synapse is the junction *between* two neurones.
- In a reflex arc there is one between the sensory and relay neurones and one between the relay and motor neurones.
- So look for a gap where two separate neurones meet, not a point within a single neurone.

Question 21 (Answer: **B**)

- An impulse arrives and triggers the release of neurotransmitter into the gap.
- The neurotransmitter diffuses across and binds to receptors on the next neurone.
- That then starts a new impulse – so release comes before diffusion, and diffusion before the new impulse.

Question 21 (Answer: **C**)

- A synapse has a gap between the two neurones, crossed chemically.
- Vesicles in the first neurone release neurotransmitter into the gap.
- The neurotransmitter then binds to receptors on the second neurone.

Question 23 (Answer: **D**)

- A reflex arc runs receptor, sensory neurone, relay neurone, motor neurone, effector.
- So the first structure after the receptor is the sensory neurone.
- The last one before the effector is the motor neurone, with the relay neurone between them.

2(a)	<i>any four from:</i> 1 (overall) there are more rods than cones / ora ; 2 (number of) cones, peaks / are greater, at fovea / at 0 arbitrary units ; 3 <i>idea that</i> (number of) rods peak either side or are increasing going towards the fovea / 0 arbitrary units ; 4 no rods present at, fovea / 0 arbitrary units ; 5 <i>idea that</i> (number of) cones outside of fovea are (approximately), equal / constant ; 6 (number of) rods greater on left hand-side of fovea ;
2(b)	more rod (cells) / greater proportion of rod cells / AW ; <i>ref. to</i> (greater sensitivity) for, night vision / low light conditions / AW ; OR fewer cones ; colour vision less important / AW ;
2(c)(i)	pupil reflex ;
2(c)(ii)	circular muscle (of the iris) ;
2(c)(iii)	antagonistic ;

2(d)(i)	A – vesicle ; B – receptor (protein) ; C – (named) neurotransmitters ;
2(d)(ii)	diffusion ; by random movement of particles OR from higher concentration to lower concentration / down concentration gradient ;