The senses - answers

1 A *stimulus* (A) such as touch, is detected by a *receptor* (B) and we may make a *response* (C).

2 The skin can detect heat, cold, touch and pressure.

3 Nerve impulses travelling from a receptor to the brain make us aware of a stimulus.

4 We can distinguish sweet, sour, salt and bitter tastes.

5 A - ciliary muscle, B - iris, C - aqueous humour, D - lens, E - cornea, F - sclera,
G - vitreous humour, H - choroid, I - retina, J - fovea, K - blind spot, L - optic nerve.

6 (b) 'The radial fibres in the iris contract' is incorrect

7 (c) There are no sensory cells in the blind spot.

8 (a) The fovea is the region of the retina which gives the most accurate interpretation of the image.
(b) The light-sensitive cells in the fovea are the cones.

9 The curved surface of the cornea, and the aqueous humour enclosed by it, refract the light. The lens also refracts the light.

10 (a) Accommodation is the way the eye can focus either near or distant objects to form a sharp image on the retina.
(b) The lens is made thinner so that light from a distant object is refracted less, or fatter so that light from a close object is refracted more.

11 (b) 'The ciliary muscle relaxes and the lens gets thinner' is the correct statement.

12 Red-green colour blindness is the most common form of colour blindness in men.

13 Long eyeballs, large eyeballs, too powerful a lens, or a combination of these defects can give rise to short-sightedness.

14 Converging (convex or meniscus) lenses can help correct long-sightedness.