A. Homeostasis

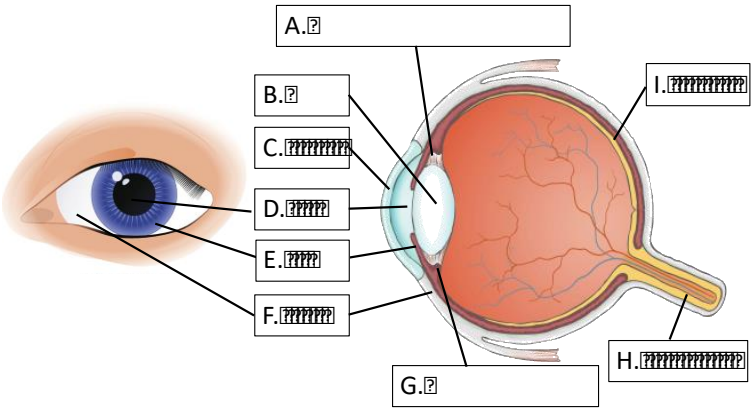
1. Define homeostasis.
2. Why does homeostasis need to maintain optimal conditions?
3. List three conditions that the body needs to maintain.
4. What do the two automatic response systems involve?
5. Define stimuli.
6. List the receptor cells and state what stimulus they detect.
7. Name the 3 coordination centres in the body and describe what each of them coordinates.
8. What is an effector?

B. The human nervous system Part 1

1. What is a stimulus?
2. What is a receptor?
3. Name the two parts of the central nervous system.
4. What is an effector?
5. What does the CNS coordinate?
6. Put these in the correct order: receptor, stimulus, response, coordinator, effector.
7. What is the role of the sensory neurone?
8. What is the role of the relay neurone?
9. What is the role of the motor neurone?
10. What is a synapse?
11. Describe what happens at the synapse.
12. Why are reflex actions important?
13. Recall the pathway of the reflex arc.

C. The human nervous system Part 2

1. Name the three main parts of the brain and state the role of each.
2. How do neuroscientists study the brain?
3. What is an EEG?
4. What is an MRI?
5. What does an MRI do?
6. Label parts A – I on the diagram below:



7. Write the name of each part of the eye in the table below:

Part of the eye	Description and function
	Transparent layer at the front of the eye, it refracts light into the eye.
	The coloured part of the eye, contains muscles that control the amount of light entering the eye.
	The hole in the middle of the iris that lets light in. Its diameter is controlled by the iris.
	A transparent, biconvex structure in the eye that refracts light onto the retina.
	Thin layer of tissue at the back of the eye that contains receptor cells for light and colour.
	Tough white supporting wall of the eye.
	Muscles that are connected to the lens by the suspensory ligaments; they change the shape of the lens.
	These connect the lens to the ciliary muscles.
	Carries impulses from the retina to the brain.

8. What is accommodation?
9. How does the eye focus on distant objects?
10. How does the eye focus on near objects?
11. What is myopia? How can it be corrected?
12. What is hyperopia? How can it be corrected?
13. Name three ways that vision can be corrected.
14. State the optimum human body temperature.
15. What part of the brain monitors and controls temperature?

BIOLOGY ONLY:

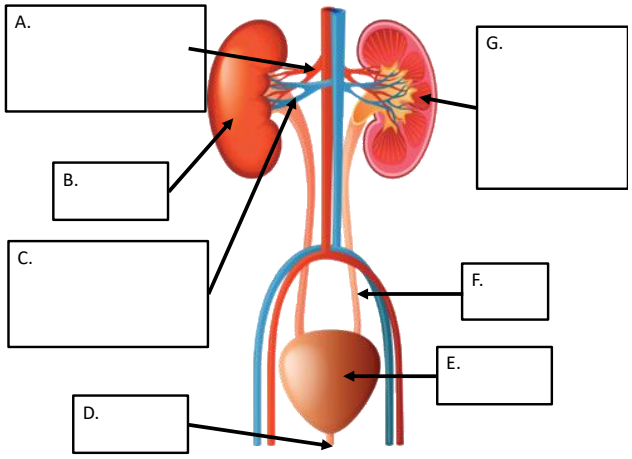
16. Describe what happens in vasoconstriction and vasodilation.

D. Hormonal coordination in humans Part 1

1. What is the endocrine system composed of?
2. What is a hormone?
3. How are hormones carried around the body?
4. Which acts faster, the nervous system or the endocrine system?
5. Where is the pituitary gland?
6. What is the role of the pituitary gland?
7. Name the hormones released by the pituitary gland.
8. Name the hormones that the pancreas releases.
9. What happens to the glucose in the blood when insulin is released?
10. **HT: Describe the role of glucagon in the regulation of glucose?**
11. Which type of diabetes is caused when the body cells no longer respond to insulin?
12. State how Type 1 diabetes is treated.
13. State how Type 2 diabetes is treated.

E. Hormonal coordination in humans Part 2

1. State the ways in which water is lost from the body.
2. Sweat contains mostly water. What else can be found in sweat?
3. What is removed via the kidneys in the urine?
4. What is a hypertonic solution?
5. What is an isotonic solution?
6. What is a hypotonic solution?
7. What happens to animal cells when they are put in water?
8. What happens to animal cells when they are put in a concentrated sugar solution?
9. **HT: What happens to excess proteins in the diet?**
10. **HT: What does deaminated mean?**
11. **HT: What is ammonia converted to in the liver?**
12. Label A – G on the diagram below.



13. Name the structures in the kidneys where the blood is filtered.
14. What are the 3 steps in the blood filtering process?
15. Describe what happens in each of the 3 steps of the blood filtering process.
16. HT: Where in the body are the water levels in the blood monitored?
17. HT: Name the hormone that controls the water levels in the blood.
18. HT: What effect does increased levels of this hormone have on the kidneys?
19. HT: Describe what happens in the body when the water content of the blood is too low?
20. HT: Describe what happens in the body when the water content of the blood is too high?
21. How does kidney dialysis treat kidney failure?
22. Describe how the dialysis machine works.
23. How does a kidney transplant treat kidney failure?
24. State the advantages and disadvantages of kidney dialysis and kidney transplants.

F. Hormonal coordination in humans Part 3

1. What is the name of the main female reproductive hormone and where is it produced?
2. What is the name of the main male reproductive hormone and where is it produced?
3. Define the word puberty.
4. Between what ages does puberty usually occur?
5. What are the female secondary sexual characteristics?
6. What are the male secondary sexual characteristics?
7. What is the menstrual cycle and how long is it?
8. At what stage of the menstrual cycle is an egg released?
9. Where is FSH released and what is its role in the menstrual cycle?
10. Where is oestrogen released and what is its role in the menstrual cycle?
11. Where is LH released and what is its role in the menstrual cycle?
12. Where is progesterone released and what is its role in the menstrual cycle?
13. **HT: What do high levels of oestrogen stimulate the release of?**
14. **HT: What do high levels of oestrogen inhibit the release of?**
15. **HT: What do high levels of progesterone inhibit the release of?**
16. What does the term contraception mean?
17. How does the contraceptive pill work?
18. How do contraceptive implants and injections work?
19. What is a spermicidal agent?
20. Name 2 barrier methods of contraception and say how they work.
21. What is the coil and how does it work?
22. What does abstaining mean?
23. **HT: What is in a fertility drug and how does it work?**
24. **HT: What is IVF?**
25. **HT: Describe the IVF process.**
26. **HT: Describe some issues with IVF treatment.**
27. **HT: What is negative feedback?**
28. Where are the adrenal glands?
29. What is the role of adrenalin?
30. Where is the thyroid gland?
31. What is the role of thyroxine?

G. Plant hormones (biology only)

1. What is the role of plant hormones?
2. What is a positive tropism? Give an example of a positive tropism.
3. What is a negative tropism? Give an example of a negative tropism.
4. Where is auxin produced in the shoot?
5. If a light is shining on the side of a shoot, where will the auxin move to?
6. What effect does auxin have on the cells in a shoot?
7. Where is auxin produced in the root?
8. What effect do auxins have on the cells in the roots?
9. HT: What is the effect of gibberellins on plants?
10. HT: How are gibberellins used in agriculture and horticulture?

HT: What is the effect of ethene on plants?

12. HT: How is ethene used in agriculture and horticulture?
13. HT: How are auxins used in agriculture and horticulture?