B5 Quick Revision Questions

H = Higher tier only

SS = Separate science only

Question 1 .... of 50

- Why does body temperature need to be kept constant?

Answer 1 .... of 50

- Enzyme action
- Cellular functions

Question 2 .... of 50

- Define homeostasis

Answer 2 .... of 50

- The regulation of internal conditions in the body

Question 3 .... of 50

- What are the two parts of the nervous system?

Answer 3 .... of 50

- Central nervous system
- Peripheral nervous system

Question 4 .... of 50

- Describe the pathway of a nerve impulse, from stimulus to response

Answer 4 .... of 50

- Stimulus
- Receptor
- Coordinator
- Effector
- Response

Question 5 .... of 50

- What are reflex actions?

Answer 5 .... of 50

- Rapid, automatic responses to a stimulus

Question 6 .... of 50

- What are the three components of the reflex arc?

Answer 6 .... of 50

- Sensory neurones
- Relay neurones
- Motor neurones

Question 7 .... of 50

- How does a nerve impulse travel from one nerve to the next?

Answer 7 .... of 50

- Chemical transmitter molecules are released from one neurone into the synapse
- They diffuse across the synapse
- They bind to receptors on the next neurone
- Channels in the next neurone open
- Nerve impulse initiated in the next neurone

Question 8 .... of 50

SS

- What are the three main regions in the brain?

Answer 8 .... of 50

SS

- Cerebral cortex
- Cerebellum
- Medulla

Question 9 .... of 50

- What is the function on the cerebral cortex?

Answer 9 .... of 50

- Consciousness
- Intelligence
- Memory
- Language

Question 10 .... of 50

SS

- Why are MRI scanners used?

Answer 10 .... of 50

SS

- Able to produce very detailed images of the nervous system
- Very safe
- Non-invasive
- Doesn’t use ionising radiation
- Safer than CT or PET scans

Question 11 .... of 50

- What test can be used to measure reaction time?

Answer 11 …. of 50

- Ruler drop test

Question 12 .... of 50

SS

- Where are light-sensitive receptor cells found?

Answer 12 .... of 50

- Retina

Question 13 .... of 50

SS

- Give one function of the optic nerve

Answer 13 .... of 50

SS

- Carries impulses from the retina to the brain

Question 14 .... of 50

SS

- What receptor cells are sensitive to colour?

Answer 14 .... of 50

SS

- Cones

Question 15 .... of 50

SS

- How is the iris adapted to low-intensity vision?

Answer 15 .... of 50

SS

- They contain rods
- They are 1000 times more sensitive to light than cones

Question 16 .... of 50

SS

- What is refaction?

Answer 16 .... of 50

SS

- The bending of light rays as they travel from one medium to another

Question 17 .... of 50

SS

- How do light rays approach the eyes from distant and near objects?

Answer 17 .... of 50

SS

Distant = light rays are nearly parallel

Near = light rays diverge

Question 18 .... of 50

SS

- What is the name of the process that changes the shape of the lens?

Answer 18 .... of 50

SS

- Accomodation

Question 19 .... of 50

SS

- How can a concave lens be used to correct short-sightedness?

Answer 19 .... of 50

SS

- Concave lenses allow light rays to diverge before they reach the eye
- This focuses the image on the retina

Question 20 .... of 50

SS

- What are the three causes of long sightedness?

Answer 20 .... of 50

SS

- Lens is too weak – not thick enough
- Eyeball is too short
- Cornea isn’t curved enough

Question 21 .... of 50

SS

- What does laser surgery do?

Answer 21 .... of 50

SS

- Change the shape of the cornea

Question 22 .... of 50

SS

- Where is body temperature monitored and controlled?

Answer 22 .... of 50

SS

- Thermoregulatory centre in the brain

Question 23 .... of 50

SS

- Give two things that occur when body temperature drops

Answer 23 .... of 50

SS

- Vasoconstriction
- Sweating – reduced or stopped
- Skeletal muscles contract and the body shivers

Question 24 .... of 50

- Why is the pituitary gland called the master gland?

Answer 24 .... of 50

- As it regulates the secretion of other endocrine glands

Question 25 .... of 50

- Name one hormones that exerts its effect over the whole body

Answer 25 .... of 50

- Growth hormone (STH)

Question 26 …. of 50

- What effect does glucose have on our body's cells?

Answer 26 .... of 50

- Causes glucose in the blood to move into our body's cells
- In liver and muscle cells, glucose is converted to glycogen so it can be stored

Question 27 .... of 50

- What is the normal concentration of blood glucose?

Answer 27 .... of 50

- 4-7 mmol/dm^3

Question 28 .... of 50

- What is the cause of type 2 diabetes?

Answer 28 .... of 50

- Body's cells lose insulin sensitivity
- Don't respond at all or as effectively to insulin

Question 29 .... of 50

- How can the glucose tolerance test be used to help diagnose type 2 diabetes?

Answer 29 .... of 50

- Blood glucose measured after 8-12 hours of no eating or drinking
- Give patient glucose and retest blood 2 hours later
- If person's tolerance is lowered = glucose will be above a certain level when retested

Question 30 .... of 50

- How can type 1 diabetics control the condition?

Answer 30 .... of 50

- Insulin injections

Question 31 .... of 50

SS

- What is the typical volume of water lost through a person's lungs?

Answer 31 .... of 50

SS

- $0.4dm^3$

Question 32 .... of 50

SS

- How do the body cells lose and gain water?

Answer 32 .... of 50

SS

- By osmosis

Question 33 .... of 50

SS

- What is the role of the kidneys?

Answer 33 .... of 50

SS

- Maintain the water balance of the body

Question 34 .... of 50

- What does thyroxine do?

Answer 34 .... of 50

- Stimulates the body's basal metabolic rate

Question 35 .... of 50

- What is the negative feedback system?

Answer 35 .... of 50

- Feedback that switches off a system when the desired effect is reached

Question 36 .... of 50

SS

- What is dialysis?

Answer 36 .... of 50

SS

- Blood taken from the arm
- The filtering of waste from a patient's blood through a partially permeable membrane
- Blood is then returned to the arm

Question 37 .... of 50

SS

- What are the risks of a kidney transplant operation?

Answer 37 .... of 50

SS

- Rejection of the kidney
- Immunosuppressent drugs for the rest of their life (increased risk of infection and cancer)
- May have to find another kidney before the end of their life

Question 38 .... of 50

SS

- Give one complication arising from dialysis

Answer 38 .... of 50

SS

- Sudden fall in blood pressure

Question 39 .... of 50

- Which four hormones control the menstrual cycle?

Answer 39 .... of 50

- Follicle stimulating hormone (FSH)
- Luteinising hormone (LH)
- Oestrogen
- Progestogen

Question 40 .... of 50 H

- Why are FSH and LH given as fertility treatments?

Answer 40 .... of 50

- As a fertility drug
- Many women then ovulate and become pregnant

Question 41 .... of 50 H

- Who determines the selection procedure for IVF on the NHS?

Answer 41 .... of 50

- The National Institute for Health and Care Excellence (NICE)

Question 42 .... of 50

- How do the nervous and endocrine systems work together in times of stress?

Answer 42 .... of 50

- E.g. adrenaline
- Nervous connections between brain and adrenal glands
- Adrenal medulla in the adrenal gland responds to nervous stimulation by releasing the hormone adrenaline

Question 43 .... of 50

- List three indicators of ovulation

Answer 43 .... of 50

- Menstrual cycle – occurring at around 14 days
- Slight increase in body temperature
- Thinning of mucus secreted from the cervix

Question 44 .... of 50

- When should a spermicidal cream be used?

Answer 44 .... of 50

- It can help with the effectiveness of other contraceptives e.g. diaphragms

Question 45 .... of 50

- Give one advantage and one disadvantage of using an IUD

Answer 45 .... of 50

- Advantages
  - Works immediately
  - Can stay in place for 10 years (copper), 3-5 years (hormonal)
- Disadvantages
  - Insertion may be uncomfortable
  - Periods may be longer or more painful

Question 46 .... of 50

SS

- How do auxins cause plants to bend towards the light?

Answer 46 .... of 50

SS

- Auxins are synthesised in the tip of the shoot
- They move away from light
- Unequal distribution of auxin causes the root to grow downwards

Question 47 .... of 50

SS

- Where are stem cells found in plants?

Answer 47 .... of 50

SS

- Meristems

Question 48 .... of 50

SS

- Name the process by which plants respond to gravity

Answer 48 .... of 50

SS

- Gravitropism

Question 49 .... of 50 H SS

- Give three uses of gibberellins

Answer 49 .... of 50

SS

- Speeds up germination
- Promote flowering
- Promote fruit growth

Question 50 .... of 50

SS

- What is an advantage of using auxins as a weedkiller?

Answer 50 .... of 50

SS

- Plants with broad leaves are more sensitive to auxins in weed killers than plants with narrow leaves
- Farmers can kill weeds in a field of wheat or barley without harming the crop