Written to the specification from Speca's own topic maps, then independently rechecked for accuracy. These are original practice questions, not past-paper questions. Spotted a mistake? Tell us at hello@speca.co.uk.

SPECA

GCSE Combined Science (AQA Trilogy) · Biology

Homeostasis and Response · Tiered Worksheet

Section A: Foundation

Nervous system and reflexes

1) Define homeostasis. [2]

2) State the three examples of homeostasis in the human body covered by this specification. [3]

3) Name the three components every control system needs, and state what each one does. [3]

4) A student accidentally touches a sharp pin and pulls their hand away immediately, without thinking about it. Name this type of response, and explain why it is useful to the body. [2]

5) Name, in order, the three types of neurone involved in a reflex arc, and name the structure at which neighbouring neurones connect. [4]

6) Required practical: a class investigates how caffeine intake affects human reaction time using a ruler-drop test. Give one reason the students should repeat each person's reaction-time measurement several times and calculate a mean. [2]

Hormones and blood glucose

7) Describe the endocrine system, and give one way a typical hormonal response differs from a typical nervous response. [3]

8) Name the gland described as the body's 'master gland', and explain why it is given this name. [2]

9) Explain how insulin controls blood glucose concentration when it is too high. [3]

10) Compare Type 1 and Type 2 diabetes in terms of their cause and how each is typically treated. [4]

Reproductive hormones and contraception

11) Name the two main hormones responsible for the development of secondary sex characteristics at puberty, and state where in the body each is produced. [4]

12) Name the four hormones involved in the menstrual cycle, and give one role of each. [4]

13) Give one way a hormonal contraceptive method works, and one way a barrier method works, then explain why decisions about contraception cannot be made by science alone. [3]

Section B: Higher (in addition to Section A)

Blood glucose control in depth

14) Explain what happens when blood glucose concentration becomes too low, and how this brings the concentration back to normal. [3]

15) Explain how insulin and glucagon work together to control blood glucose concentration by negative feedback. [3]

Free from speca.co.uk/gcse-science-questions-by-topic. Original questions written by Speca, not past papers.
Speca is not affiliated with, endorsed by, or sponsored by AQA.

Menstrual cycle and fertility treatment

16) In the menstrual cycle, oestrogen level rises during the first half of the cycle, and LH level spikes sharply around day 14. Explain how FSH and oestrogen interact to bring about this LH spike and ovulation. **[3]**

17) Explain how FSH and LH can be used as a fertility drug to help a woman who is not producing enough of these hormones naturally to conceive. **[2]**

18) Describe how IVF (In Vitro Fertilisation) is carried out as a fertility treatment. **[4]**

19) Give two reasons a couple might weigh carefully before deciding to have IVF treatment. **[2]**

Adrenaline and thyroxine

20) Explain the role of adrenaline in the body's response to fear or stress. **[3]**

21) Explain the role of thyroxine in the body, and what it means to say thyroxine level is 'controlled by negative feedback'. **[3]**

Speca is an independent product and is not affiliated with, endorsed by, or sponsored by AQA. All questions are originally authored and aligned to the publicly published AQA GCSE Combined Science: Trilogy (8464) specification.