AQA GCSE Biology | 8461

SPECIFICATION POINT 4.5.3.1

Human endocrine system

Mark schemes and examiner comments

Tier	**Foundation**
Question groups	**10**
Available paper years	**2007–2024**

Using this booklet

1. Booklet answer numbers match the question booklet.
2. Use the original question number within marking tables.
3. Examiner comments are included where available.

Name: _____ **Date:** _____

Where a precise marking extract is unavailable, the full source document is included in an appendix. Any missing mark scheme is explicitly identified.

4.5.3.1 Human endocrine system

Answer 01 · Mark scheme June 2007 | BLY1A | Original Q4 | Legacy

Four	**A**	eggs	**2**
	B	ovaries	**3**
	C	pituitary gland	**1**
	D	womb	**4**

Answer 02 · Mark scheme November 2008 | BLY1AP | Original Q3 | Legacy

Three	**A**	produces cholesterol	**2**
	B	produces sweat	**3**
	C	produces urine	**4**
	D	produces hormones	**1**

Answer 03 · Mark scheme June 2010 | BLY1AP | Original Q5 | Legacy

Five	**A**	embryo	2				
	B	ovary	1				
	C	pituitary gland	3				
	D	womb	4				
	A		**B**		**C**		**D**

Answer 04 · Mark scheme March 2011 | BLY1AP | Original Q5 | Legacy

Five	**A**	liver	**4**				
	B	pituitary gland	**1**				
	C	kidney	**3**				
	D	skin	**2**				
	A		**B**		**C**		**D**

Answer 05 · Mark scheme June 2011 | BLY1AP | Original Q5 | Legacy

Five	**A**	kidney	4				
	B	liver	1				
	C	ovary	3				
	D	pituitary gland	2				
	A		**B**		**C**		**D**

4.5.3.1 Human endocrine system

Answer 06 · Mark scheme June 2016 | BL1FP | Original Q4 | Legacy

Question	Answers	Extra information	Mark	AO / Spec. Ref.
4(a)(i)	follicle stimulating hormone / FSH		1	AO1 1.2.2c/d
4(a)(ii)	oestrogen		1	AO1 1.2.2c/d
4(b)(i)	any **one** from: • to help them have a baby / get pregnant • to stimulate egg production / release / maturation • own levels of FSH / LH / hormone (too) low	ignore to make them fertile allow to increase hormone / FSH / LH levels do not allow to increase oestrogen levels	1	AO1 1.2.2e
4(b)(ii)	through the bloodstream		1	AO1 1.2.2b
4(c)	oestrogen progesterone		1 1	AO1 1.2.2e
Total			**6**	

4.5.3.1 Human endocrine system

Answer 06 · Mark scheme

June 2016 | BL1FP | Original Q4 | Legacy

4.5.3.1 Human endocrine system

Answer 07 · Mark scheme November 2020 | 8461/2F | Original Q5

Question	Answers	Extra information	Mark	AO / Spec. Ref.
05.1	(A) cerebellum (B) pituitary gland (C) cerebral cortex		1 1 1	AO1 4.5.2.2 AO1 4.5.3.1 AO1 4.5.2.2
05.2	cerebellum		1	AO1 4.5.2.2
05.3	coordinator		1	AO1 4.5.1 4.5.2.1
05.4	neurone	allow nerve (cell) ignore names of neurone	1	AO1 4.5.2.1
05.5	retina		1	AO1 4.5.2.3
05.6	can see fruit / food (so) get more food	allow can find fruit / food	1 1	AO2 4.5.2.3 4.7.1.4
05.7	accommodation		1	AO1 4.5.2.3
05.8	light rays are refracted less		1	AO1 4.5.2.3
05.9	any **one** from: • myopia • short-sightedness	allow near-sightedness	1	AO1 4.5.2.3
Total			**12**	

4.5.3.1 Human endocrine system

Answer 07 · Mark scheme

November 2020 | 8461/2F | Original Q5

4.5.3.1 Human endocrine system

Answer 08 · Mark scheme November 2021 | 8461/2F | Original Q2

Question	Answers	Extra information	Mark	AO / Spec. Ref.
02.1	A		1	AO1 4.5.3.1
02.2	D		1	AO1 4.5.3.1 4.5.3.2
02.3	liver		1	AO1 4.5.3.2
02.4	glycogen		1	AO1 4.5.3.2
02.5	2.6 7.6 ($mmol/dm^3$)	allow answers in the range 2.5 to 2.7 allow a correctly calculated value using student's value from graph + 5	1 1	AO2 4.5.3.2
02.6	30 (minutes)	allow ½-hour **or** 0.5 hour	1	AO2 4.5.3.2
02.7	points too far apart **or** no reading between 30 and 50 mins **or** points joined by straight lines **or** values could have fallen to zero change before 50 mins	 allow no reading at 40 mins allow not a curve of best fit	1	AO3 4.5.3.2

4.5.3.1 Human endocrine system

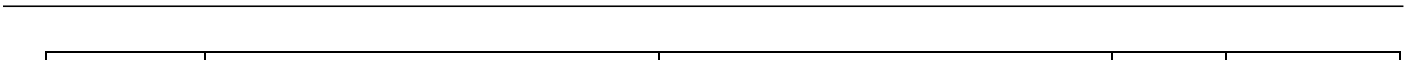
Answer 08 · Mark scheme

Question	Answers	Extra information	Mark	AO / Spec. Ref.
02.8	higher values of y than given line returning to(wards) zero change later than given line		1 1	AO2 AO3 4.5.3.2
Total			**10**	

4.5.3.1 Human endocrine system

Answer 08 · Mark scheme

November 2021 | 8461/2F | Original Q2



4.5.3.1 Human endocrine system

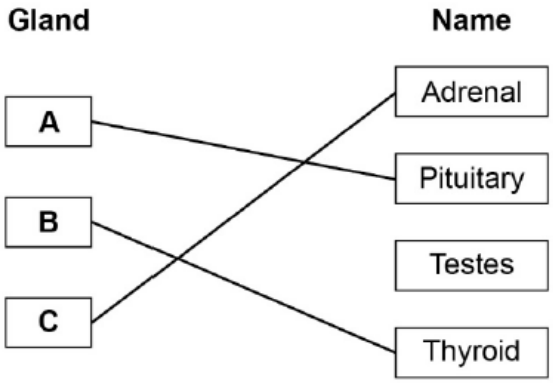
Answer 09 · Mark scheme

June 2023 | 8461/2F | Original Q1

Question 1

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.1	the endocrine system		1	AO1 4.5.3.1

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.2	by the blood		1	AO1 4.5.3.1

Question	Answers	Mark	AO / Spec Ref.
01.3	 do **not** accept more than one line from a box on the left	1 1 1	AO1 4.5.3.1

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.4	D		1	AO1 4.5.3.1 4.5.3.2

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.5	the liver		1	AO1 4.5.3.2

4.5.3.1 Human endocrine system

Answer 09 · Mark scheme

June 2023 | 8461/2F | Original Q1

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.6	any **one** from: • lowers (blood) glucose • (makes) cells / liver / muscles take in glucose • (changes) glucose to glycogen	allow sugar for glucose allow controls (blood) glucose allow makes glycogen	1	AO1 4.5.3.2

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.7	follicle stimulating hormone (FSH)		1	AO1 4.5.3.4

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.8	oestrogen progesterone		1 1	AO1 4.5.3.4

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.9	any **two** from: • oral contraceptive • injection • implant • (skin) patch • (some) IUDs	allow the pill allow contraceptive rod allow IUS allow named methods allow coil with hormone	2	AO1 4.5.3.5

Total Question 1	13

4.5.3.1 Human endocrine system

Answer 10 · Mark scheme

June 2024 | 8461/2F | Original Q1

Question 1

Question	Answers	Mark	AO / Spec Ref.
01.1	(stimulus) → receptor → coordinator → effector → (response) allow receptor → coordinator for **1** mark allow coordinator → effector for **1** mark	2	AO1 4.5.2.1

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.2	any **two** from: • fast / rapid • a response / reaction • automatic / involuntary **or** not under conscious control • protects (from danger / harm)	ignore action allow not coordinated by the conscious part of the brain **or** allow does not involve thought / thinking ignore not coordinated by the brain	2	AO1 4.5.2.1

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.3	blinking in sudden bright light		1	AO2 4.5.2.1

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.4	muscle		1	AO1 4.5.2.1

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.5	B		1	AO1 4.5.3.1

4.5.3.1 Human endocrine system

Answer 10 · Mark scheme

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.6	A		1	AO1 4.5.2.2

Question	Answers	Extra information	Mark	AO / Spec Ref.
01.7	balance		1	AO1 4.5.2.2

Total Question 1	**9**

4.5.3.1 Human endocrine system

Answer 07 · Examiner comments November 2020 | 8461/2F | Original Q5

Question 5 (low & standard demand)

This question was about the brain and vision. In **05.6**, whilst many students realised that being able to detect UV light would enable a bird to feed, very few went on to explain that this would mean they would get more food (than their competitors). Some students suggested that this ability would enable the birds to detect predators, although there was no information that would lead them to this conclusion. Whilst others thought that only rotten fruit would reflect UV light, so being able to detect this would prevent them eating such fruit. **05.8** was not answered well, with the correct response, 'light rays are refracted less' when looking at a distant object being by far the least commonly chosen answer. More light being reflected was the preference of nearly half of the students.

Answer 09 · Examiner comments June 2023 | 8461/2F | Original Q1

Question 1

This question was about human hormones.

01.1 Almost two-thirds of students correctly selected the endocrine system as the name of the system with glands that produce hormones.

01.2 Two-thirds of students also chose the blood as the means of transport of hormones around the body.

01.3 Recognition of the hormone-producing glands in Figure 1 was less secure, with fewer than half of students able to assign all three names correctly to their positions in the body.

01.4 More than two-thirds of students recognised that gland D in Figure 1 was the source of insulin.

01.5 A large majority of students selected the liver as insulin's main target organ.

01.6 Around one-third of students were able to describe an effect of insulin in terms of lowering blood glucose or causing it to be taken in by cells or turned into glycogen.

Questions 01.7 to 01.9 related to the female reproductive hormones.

01.7 The vast majority of students selected FSH as the hormone that causes an egg to mature in the ovary.

4.5.3.1 Human endocrine system

Answer 09 · Examiner comments June 2023 | 8461/2F | Original Q1

01.8 The vast majority of students were able to select the name of at least one hormone that helped to maintain the lining of the uterus, and almost two-thirds correctly selected two: oestrogen and progesterone.

01.9 Two methods of contraception that use hormones were required here and, although over three-quarters of students knew at least one, fewer than a half could give two. The most common answers were 'the pill', 'injections' or 'patches'. A surprising number of students could offer no suggestions, and 'condoms' were a common incorrect suggestion.

Answer 10 · Examiner comments June 2024 | 8461/2F | Original Q1

Question 1 (low demand)

01.1 Over 50% of students correctly completed the order of structures and gained two marks.

01.2 Almost 80% of students gained credit in this question, with the majority gaining full credit with very simple statements such as 'a fast reaction'. A common reason for not gaining credit was by giving an example of a reflex action rather than defining it.

01.3 95% of students knew that blinking in sudden bright light is an example of a reflex action.

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Answer 10 · Examiner comments June 2024 | 8461/2F | Original Q1

01.4 Almost 95% of students knew that muscle is the type of tissue that causes movement.

01.5 Around two thirds of students correctly identified the pituitary gland.

01.6 Half of students correctly identified the cerebral cortex.

01.7 Almost 65% of students knew that balance is the function of the cerebellum.