AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 4.5.3.3

Hormones in human reproduction

Mark schemes and examiner comments

Tier	**Foundation**
Question groups	**3**
Available paper years	**2018–2021**

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.

4.5.3.3 Hormones in human reproduction

Answer 01 · Mark scheme June 2018 | 8464/B/2F | Original Q3

Question	Answers	Extra information	Mark	AO / Spec. Ref.
03.1	A		1	AO1 4.5.2 4.1.1.3
03.2	D		1	AO2 4.5.2 4.1.1.3
03.3	A = synapse B = motor (neurone)	in this order only	1 1	AO1 4.5.2
03.4	a reflex action		1	AO1 4.5.2
03.5	 12 (ms) 0.012 (s)	an answer of 0.012 (s) scores **2** marks	 1 1	AO2 4.5.2
03.6	A		1	AO1 4.5.3.1
03.7	controls the release of an egg		1	AO1 4.5.3.3
03.8	in the blood(stream)	allow in the plasma / blood vessels do **not** accept in blood cells / platelets	1	AO1 4.5.3.1

4.5.3.3 Hormones in human reproduction

Answer 01 · Mark scheme

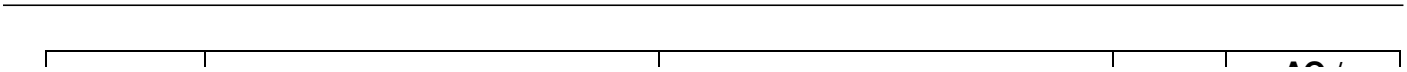
June 2018 | 8464/B/2F | Original Q3

Question	Answers	Extra information	Mark	AO / Spec. Ref.
03.9	(person) C	no marks if A or B given	1	AO3 4.5.3.3
	any **one** from: • the testosterone level is high(er) • the oestrogen **and** / **or** progesterone levels are low • the oestrogen and progesterone levels do not rise and fall as they do in a menstrual cycle	allow testosterone is the main male (sex) hormone allow there is no menstrual cycle	1	
Total			**12**	

4.5.3.3 Hormones in human reproduction

Answer 01 · Mark scheme

June 2018 | 8464/B/2F | Original Q3



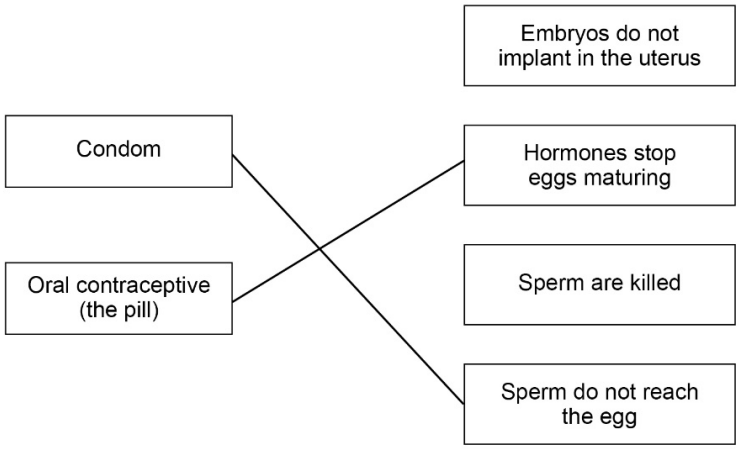
4.5.3.3 Hormones in human reproduction

Answer 02 · Mark scheme November 2020 | 8464/B/2F | Original Q1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1	gametes are formed sperm and egg fuse		1 1	AO1 4.6.1.1
01.2	Y gamete for father Mother: X, X Father: X → XX, **XX**; **Y** → **XY**, **XY**	all derivations correct = 2 marks 1 or 2 correct = 1 mark allow correct derivations from incorrect gamete	1 2	AO2 4.6.1.6
01.3	rings drawn around all XY	allow one ring drawn around both XY ignore ring drawn around father's genotype ecf any letter for Y, except X	1	AO2 4.6.1.6
01.4	**Hormone** / **Change that hormone causes at puberty** Oestrogen → Breasts develop Skin turns lighter Testosterone → Voice becomes deeper Wisdom teeth appear If more than one line from a hormone no mark for that hormone		1 1	AO2 4.5.3.3

4.5.3.3 Hormones in human reproduction

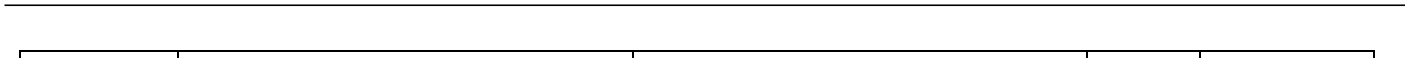
Answer 02 · Mark scheme

01.5	**Method of contraception** / **How the method prevents pregnancy**  If more than one line from a method of contraception no mark for that method		1 1	AO1 4.5.3.4
01.6	advantage – any **one** from: • very reliable • easy to take • do not have to rely on partner • helps to treat acne or period pain disadvantage – any **one** from: • may cause side effects • may affect her fertility later • have to remember to take it (every day) • does not protect against STIs	ignore you do not get pregnant allow described eg headaches, nausea, putting on weight allow you have to take it every day	1 1	AO3 4.5.3.4
Total			**12**	

4.5.3.3 Hormones in human reproduction

Answer 02 · Mark scheme

November 2020 | 8464/B/2F | Original Q1



4.5.3.3 Hormones in human reproduction

Answer 03 · Mark scheme

November 2021 | 8464/B/2F | Original Q6

Question	Answers	Extra information	Mark	AO / Spec. Ref.
06.1	endocrine (system)	ignore hormonal (system)	1	AO1 4.5.3.1
06.2	D		1	AO1 4.5.3.1 4.5.3.2
06.3	A		1	AO1 4.5.3.1
06.4	(in / through / via) blood	allow (in / through / via) bloodstream allow (in / through / via) plasma allow (in / through / via) blood vessels **or** named blood vessel	1	AO1 4.5.3.1
06.5	ovary / ovaries testis / testes	in either order allow testicle(s) allow placenta if no other mark awarded allow gonad(s) for **1** mark	1 1	AO1 4.5.3.1 4.5.3.3
06.6	luteinising hormone (LH)		1	AO2 4.5.3.3

4.5.3.3 Hormones in human reproduction

Answer 03 · Mark scheme

November 2021 | 8464/B/2F | Original Q6

Question	Answers	Mark	AO / Spec. Ref.
06.7	**Level 3:** A judgement, strongly linked and logically supported by a sufficient range of correct reasons, is given.	5–6	AO3 4.5.3.4 4.3.1.9
	Level 2: Some logically linked reasons are given. There may also be a simple judgement.	3–4	
	Level 1: Relevant points are made. They are not logically linked.	1–2	
	No relevant content	0	
	Indicative content Advantages • non-permanent like condom / diaphragm / IUDs / spermicides / abstinence **or** unlike surgical sterilisation • longer lasting than condom / diaphragm / IUDs / spermicides • no need to remember unlike oral contraceptive • one injection rather than surgery for sterilisation • surgery (for sterilisation) has risks, for example, infection • no other method of long-lasting contraception (rather than sterilisation) relies on men Disadvantages • no protection from sexually transmitted diseases unlike barrier methods **or** named barrier method • not as long lasting as (surgical) sterilisation • at clinical / drug trial stage, so unknown side effects • at clinical / drug trial stage, so unknown efficacy • do not know how long it will last (as info only states 'up to 13 years') • can stop taking a pill **or** using a condom if you change your mind / want to get pregnant, whereas have to wait 13 years with the injection • (minor) risk of infection posed with an injection compared to no risk with the oral contraceptive For **Level 3** references to advantages **and** disadvantages of the new drug compared to named existing methods are required.		
Total		**13**	

4.5.3.3 Hormones in human reproduction

Answer 03 · Mark scheme

November 2021 | 8464/B/2F | Original Q6

Answer 03 · Examiner comments

November 2021 | 8464/B/2F | Original Q6

Question 6 (standard demand)

This question was about hormones and contraception. Early parts of the question requiring recall of correct terms such as ‘endocrine’ were not answered well. Common incorrect answers were digestive system, respiratory system or attempts to name the organs. The vast majority knew that hormones travel in the blood. Some students knew the hormones were likely to be in the plasma, which was creditworthy. Inaccuracies in responses such as ‘in red blood cells’ did not gain the mark. Confusion was seen regarding the term ‘glands’ in **06.5** in this context, with a wide range of other parts of the reproductive system being named.

There was a generally a good attempt at evaluating a new contraceptive method with existing methods in **06.7**. In this question students needed to consider both advantages and disadvantages compared with named existing methods of contraception to access 5 or 6 marks. Clear guidance relating to the command words used in AQA GCSE Sciences examinations is available. Students were not given information regarding the efficacy of the new contraceptive, but some students attempted to compare the efficacy with existing contraceptive methods.