AQA GCSE Biology | 8461

SPECIFICATION POINT 4.5.3.5

Contraception

Mark schemes and examiner comments

Tier	**Foundation**
Question groups	**8**
Available paper years	**2007–2023**

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.

4.5.3.5 Contraception

Answer 01 · Mark scheme

June 2007 | BLY1F | Original Q2 | Legacy

The full source mark scheme begins on page 18. Follow original question 2 in that document.

4.5.3.5 Contraception

Answer 02 · Mark scheme

Question 6

question	answers	extra information	mark
6(a)	any **two** from: • FSH • LH • oestrogen	 do **not** accept FHS do **not** accept LSH allow progesterone as alternative to any hormone	2
6(b)	egg(s) / egg cell(s) / ova	do **not** accept ovaries do **not** accept fertilised eggs	1
6(c)(i)	any **one** from: • don't have to take (pill) every day • can't forget to take • more reliable • lasts 3 years / lasts longer • hormone level in blood more constant	ignore faster ignore side effects ignore cost	1
6(c)(ii)	any **one** from: • eg painful (to insert) / uncomfortable / causes rash • woman can't take it out • more difficult to stop treatment • needs to be removed if woman decides to become pregnant	ignore cost ignore side effects unqualified allow have to wait three years to become pregnant	1
Total			**5**

4.5.3.5 Contraception

Answer 02 · Mark scheme

June 2011 | BLY1F | Original Q6 | Legacy

BLY1F

4.5.3.5 Contraception

Answer 03 · Mark scheme

June 2012 | BL1FP | Original Q5 | Legacy

Question 5

question	answers	extra information	mark
5 (a)(i)	any **one** from: • as a sleeping pill • treating leprosy	ignore cancer / AIDS do **not** accept morning sickness	1
5 (a)(ii)	thalidomide causes birth defects / abnormalities / described to be (more) sure of not getting pregnant	in this order ignore kill / harm / damage baby allow to be certain there is no baby **or** in case one doesn't work	1 1
5 (b)(i)	oestrogen progesterone		1 1
5 (b)(ii)	any **two** from: • reduce chances of <u>ovarian</u> cancer • <u>more</u> effective (in preventing pregnancy) • no pills (to remember) for 7 days (out of every 28) • doesn't have to be taken at the same time every day	allow only taken for 21 days (out of 28)	2
5 (b)(iii)	less chance of headaches **or** less chance of forgetting	ignore won't get headaches allow lower dose of hormone allow fewer side effects ignore only contains one hormone	1
Total			**8**

4.5.3.5 Contraception

Answer 03 · Mark scheme

June 2012 | BL1FP | Original Q5 | Legacy

BL1FP

4.5.3.5 Contraception

Answer 04 · 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**	

4.5.3.5 Contraception

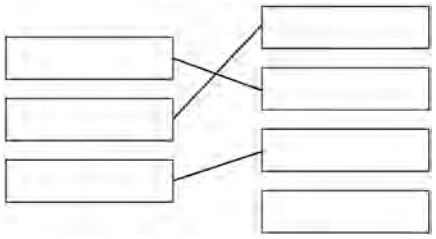
Answer 04 · Mark scheme

June 2016 | BL1FP | Original Q4 | Legacy

4.5.3.5 Contraception

Answer 05 · Mark scheme

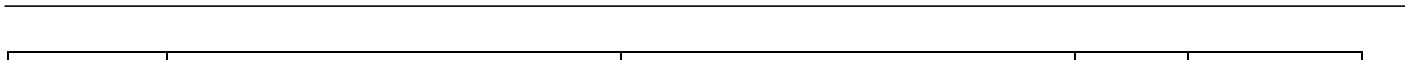
June 2018 | 8461/2F | Original Q2

Question	Answers	Extra information	Mark	AO / Spec. Ref.
02.1	to allow implantation of the embryo		1	AO1 4.5.3.4
02.2	oestrogen		1	AO1 4.5.3.4
02.3	13 / 14 / 15 / 16	allow any number in range 13 to 16 allow any range within these values eg 14–16	1	AO3 4.5.3.5
02.4		extra line from a method cancels the mark	1 1 1	AO1 4.5.3.5
02.5	more reliable than diaphragm / spermicidal cream low chance of pregnancy no side effects	allow fewer pregnancies than diaphragm / spermicidal cream allow only 1 more pregnancy than the pill (per 100 women per year) allow almost as good as the pill allow reference to one named example allow easy to get / buy allow easy to use allow prevent / reduce spread of STDs / gonorrhoea / HIV ignore cost	1 1 1	AO3 4.5.3.5
Total			9	

4.5.3.5 Contraception

Answer 05 · Mark scheme

June 2018 | 8461/2F | Original Q2



4.5.3.5 Contraception

Answer 06 · Mark scheme

June 2019 | 8461/1F | Original Q5

05.1	gonorrhoea		1	4.3.1.3 AO1
05.2	the bacteria are resistant to the antibiotics		1	4.3.1.3 AO2
05.3	abstain from sex(ual intercourse) **or** wash hands after touching penis / urinating / using the toilet	allow abstinence ignore wash hands unqualified	1	4.3.1.1 4.3.1.3 AO2
05.4	**Level 2:** Scientifically relevant features are identified; the way(s) in which they are similar / different is made clear and (where appropriate) the magnitude of the similarity / difference is noted.		4–6	4.1.1.6 AO3 x3 AO2 x3
	Level 1: Relevant features are identified and differences noted.		1–3	
	No relevant content		0	
	Indicative Content: **qualitative statements** • **3** works best on **A** • **1** works best on **B** • **2** works best on **C** • **1** is least effective on **A** • **3** is least effective on **B** • **3** is least effective **or** has no effect on **C** **quantitative statements** • **1** kills more of **B** and **C** compared to **A** • **2** kills more of **C** than **A** / **B** • **3** kills more of **A** than **B** and **C** • **2** kills the same amount of **A** and **B** • **2** and **3** killed similar amounts of **B** • **C** are resistant to **3** • only **2** worked well on all of the bacteria • for **A**, **3** works best, **2** is next and **1** is least effective • for **B**, **1** works best, **2** is next and **3** is least effective • for **C**, **2** works best, **1** is next and **3** is least effective for **level 2** reference to qualitative and quantitative statements is required			

4.5.3.5 Contraception

Answer 06 · Mark scheme

June 2019 | 8461/1F | Original Q5

Question	Answers	Extra information	Mark	AO / Spec. Ref.
05.5	sample **E**		1	4.1.1.6 AO2
05.6	$\frac{15 + 12 + 13 + 16}{4}$ **or** $\frac{56}{4}$	an answer of 14 scores **2** marks	1	4.1.1.6 AO2
	14		1	
05.7	(area = 0.1 × 0.1 =) 0.01	an answer of 140 000 scores **3** marks an incorrect answer for one step does not prevent allocation of marks for subsequent steps allow 1×10^{-2}	1	4.1.1.6 AO2
	(volume = 0.01 × 0.01 =) 0.0001	allow 1×10^{-4}	1	
	(number = $\frac{14}{0.0001}$ =) 140 000	allow ecf from question **05.6** allow 1.4×10^{5} do **not** accept 14×10^{4}	1	
05.8	Q		1	4.1.1.6 AO2
05.9	(bacteria) could make humans ill **or** (bacteria) could kill humans **or** (bacteria) could release toxins	allow reverse argument allow (bacteria) cause infection / disease allow (bacteria) cause appropriately named disease ignore harmful	1	4.3.1.1 AO2
Total			**17**	

4.5.3.5 Contraception

Answer 06 · Mark scheme

June 2019 | 8461/1F | Original Q5

Question	Answers	Extra information	Mark	AO / Spec. Ref.

4.5.3.5 Contraception

Answer 07 · Mark scheme

June 2022 | 8461/2F | Original Q5

Question 5

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

Question	Answers	Extra information	Mark	AO / Spec. Ref.
05.2	FSH causes an egg to mature in the ovary		1	AO1 4.5.3.4

Question	Answers	Extra information	Mark	AO / Spec. Ref.
05.3	(from day) 9 (to day) 15	do **not** accept (from day) 15 (to day) 9	1	AO2 4.5.3.5

4.5.3.5 Contraception

Answer 07 · Mark scheme

Question	Answers	Mark	AO / Spec. Ref.
05.4	**Level 3:** Relevant points (reasons/causes) are identified, given in detail and logically linked to form a clear account.	5–6	AO1 4.5.3.4 4.5.3.5
	Level 2: Relevant points (reasons/causes) are identified and there are attempts at logical thinking. The resulting account is not fully clear.	3–4	
	Level 1: Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical thinking.	1–2	
	No relevant content	0	
	Indicative content • oral contraceptive / the 'pill' ○ (contains hormones / oestrogen / progesterone) to prevent egg / follicle maturing **or** prevents ovulation • injection / implant / skin patch ○ (contains hormones / oestrogen / progesterone) to prevent egg / follicle maturing **or** prevents ovulation • condom / femidom ○ prevents sperm reaching egg or prevents sperm entering woman's body / vagina • diaphragm ○ prevents sperm reaching egg / womb / oviduct • IUD ○ prevents implantation **or** releases hormone / progesterone to prevent ovulation **or** (releases copper ions to) thicken mucus and prevent sperm passage • spermicide ○ kills sperm • sterilisation / vasectomy / tubular ligation ○ prevents passage of sperm / egg • rhythm method ○ no egg available for fertilisation		

Total Question 5		**10**

4.5.3.5 Contraception

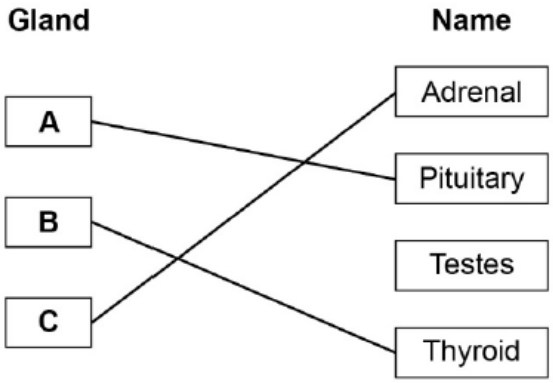
Answer 08 · Mark scheme

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

4.5.3.5 Contraception

Answer 08 · Mark scheme

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

4.5.3.5 Contraception

Version 1.0: 0707

ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Secondary Education

Science B 4462 / Biology 4411

BLY1F Unit Biology 1

Mark Scheme

2007 examination - June series

4.5.3.5 Contraception

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this Mark Scheme are available to download from the AQA Website: www.aqa.org.uk

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Dr Michael Cresswell, Director General.

4.5.3.5 Contraception

MARK SCHEME

Information to Examiners

1. General

The mark scheme for each question shows:

- the marks available for each part of the question
- the total marks available for the question
- the typical answer or answers which are expected
- extra information to help the Examiner make his or her judgement and help to delineate what is acceptable or not worthy of credit or, in discursive answers, to give an overview of the area in which a mark or marks may be awarded.

The extra information is aligned to the appropriate answer in the left-hand part of the mark scheme and should only be applied to that item in the mark scheme.

At the beginning of a part of a question a reminder may be given, for example: where consequential marking needs to be considered in a calculation; or the answer may be on the diagram or at a different place on the script.

In general the right hand side of the mark scheme is there to provide those extra details which confuse the main part of the mark scheme yet may be helpful in ensuring that marking is straightforward and consistent.

2. Emboldening

2.1 In a list of acceptable answers where more than one mark is available 'any **two** from' is used, with the number of marks emboldened. Each of the following lines is a potential mark.

2.2 A bold **and** is used to indicate that both parts of the answer are required to award the mark.

2.3 Alternative answers acceptable for a mark are indicated by the use of **or**. (Different terms in the mark scheme are shown by a / ; eg allow smooth / free movement.)

3. Marking points

3.1 Marking of lists

This applies to questions requiring a set number of responses, but for which candidates have provided extra responses. The general principle to be followed in such a situation is that 'right + wrong = wrong'.

Each error/contradiction negates each correct response. So, if the number of error/contradictions equals or exceeds the number of marks available for the question, no marks can be awarded.

However, responses considered to be neutral (indicated as * in example 1) are not penalised.

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Example 1: What is the pH of an acidic solution? (1 mark)

Candidate	Response	Marks awarded
1	4,8	0
2	green, 5	0
3	red*, 5	1
4	red*, 8	0

Example 2: Name two planets in the solar system. (2 marks)

Candidate	Response	Marks awarded
1	Pluto, Mars, Moon	1
2	Pluto, Sun, Mars, Moon	0

3.2 Use of chemical symbols / formulae

If a candidate writes a chemical symbol / formula instead of a required chemical name, full credit can be given if the symbol / formula is correct and if, in the context of the question, such action is appropriate.

3.3 Marking procedure for calculations

Full marks can be given for a correct numerical answer, as shown in the column 'answers', without any working shown.

However if the answer is incorrect, mark(s) can be gained by correct substitution / working and this is shown in the 'extra information' column;

3.4 Interpretation of 'it'

Answers using the word 'it' should be given credit only if it is clear that the 'it' refers to the correct subject.

3.5 Errors carried forward

Any error in the answers to a structured question should be penalised once only.

Papers should be constructed in such a way that the number of times errors can be carried forward are kept to a minimum. Allowances for errors carried forward are most likely to be restricted to calculation questions and should be shown by the abbreviation e.c.f. in the marking scheme.

3.6 Phonetic spelling

The phonetic spelling of correct scientific terminology should be credited **unless** there is a possible confusion with another technical term.

3.7 Brackets

(…..) are used to indicate information which is not essential for the mark to be awarded but is included to help the examiner identify the sense of the answer required.

3.8 Unexpected Correct Answers not in the Mark Scheme

The Examiner should use professional judgement to award credit where a candidate has given an unexpected correct answer which is not covered by the mark scheme. The Examiner should consult with the Team Leader to confirm the judgement. The Team Leader should pass this answer on to the Principal Examiner with a view to informing all examiners.

4.5.3.5 Contraception

BLY1F Question 1

	answers	extra information	mark
(a)(i)	any **two** from: • light • water • space • nutrients / ions / minerals / named • carbon dioxide / CO_2	list principle ignore oxygen / food / sun	2
(ii)	less competition for water **or** more water / nutrients / minerals available	ignore space / light / food	1
(b)	camouflage / same shape as leaf / looks like a leaf	allow ‘blends in’ ignore colour	1
total			4

4.5.3.5 Contraception

BLY1F Question 2

	answers	extra information	mark
(a)	any **three** from: • water • ions / minerals / salts • temperature • blood sugar • heart rate • blood pressure	 allow breathing / oxygen / carbon dioxide allow sodium / chloride, other ions neutral allow heat ignore urea	3
(b)	contraceptive drug fertility drug		1 1
(c)(i)	eg nicotine, alcohol, cocaine, heroin, painkillers, tranquilisers, LSD	allow cannabis / weed or other alternative names allow tobacco ignore smoking / ecstasy	1
(ii)	alters body chemistry **or** craving / needing / dependence withdrawal symptoms on stopping	allow psychological dependence allow withdrawal described allow ‘feel ill without it’	1 1
total			8

4.5.3.5 Contraception

BLY1F Question 3

	answers	extra information	mark
	joining		1
	sexual		1
	identical		1
	asexual		1
	clones		1
total			5

BLY1F Question 4

	answers	extra information	mark
(a)	7.8		1
(b)	14 / 13.6	allow answer 13 without working for **1** mark 7500 ÷ 550 gains **1** mark	2
(c)	produces / increases blood cholesterol	ignore obesity	1
	affects heart **or** affects blood vessels **or** affects blood pressure	accept clogs blood vessels	1
(d)	(increases) blood pressure	ignore references to heart / blood vessels	1
total			6

4.5.3.5 Contraception

BLY1F Question 5

	answers	extra information	mark
(a)	fossils / teeth / bones / skeleton / foot prints	allow cave drawings do **not** accept scientists have seen them	1
(b)	only (some) bones remain / soft parts have decayed	accept 'no-one has ever seen one' allow no photos, no pictures, no drawings	1
(c)	any **two** from: • hunted by human • (new) predator • (new) competitor • (new) disease • environment changed / named environmental change • prey extinct / loss of food supply	 allow more predators allow natural disaster ignore not enough food	2
total			4

4.5.3.5 Contraception

BLY1F Question 6

	answers	extra information	mark
(a)(i)	56	accept 54 – 58	1
(ii)	increased		1
	reasonable qualification eg slowly then more quickly **or** to 174 / 176 **or** by 138 / 140		1
(b)	any **two** from:		2
	• no immunity **or** antibodies ineffective	accept no resistance	
	• no vaccines **or** humans not immunised		
	• idea of large scale contact **or** large scale travel	do **not** accept passed on ignore no cure	
total			5

4.5.3.5 Contraception

BLY1F Question 7

	answers	extra information	mark
(a)	scientists figures based on research / calculations / data **or** scientists sample whole area	ignore reasons based on bias	1
	fishermen based on impression / hearsay / experience **or** fishermen fish in well-stocked / limited areas	scientists sample a wider area = **2** marks fishermen only fish in well-stocked areas = **2** marks if no marks gained fishermens' opinion **and** scientists' opinion gains **1** mark	1
(b)	any **two** from: • economic considerations • political impact • pressure groups **or** fears of extinction	eg fear for jobs, profits, big demand for cod eg allow EU / government decide or laws will be passed	2
total			4

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BLY1F Question 8

	answers	extra information	mark
(a)	any **two** from: • area of bed sampled • sampling time • size of net • kicking action • net position	control variables from information given	2
(b)	any **two** from: • some animals not dislodged • some animals missed / through / escaped net • invertebrates difficult to identify • invertebrates from outside area	must be ideas related to a sample ignore reliability etc	2
(c)	10 to 99 **or** 10 – 99 **or** 99 to 10 **or** 99 – 10		1
(d)	any **two** from: • increased / goes up • 0 at sample 4 • to (more than) 100	allow increase implied from all data described	2
(e)	mayfly because not found downstream of point where sewage enters stream **or** only in the unpolluted water		1 1
total			9

4.5.3.5 Contraception

Answer 07 · Examiner comments — June 2022 | 8461/2F | Original Q5

Question 5

This question was about the menstrual cycle and methods of contraception.

05.1 Almost two-thirds of students correctly selected *oestrogen* and *progesterone* as the female reproductive hormones. One in eight students included testosterone in their selection.

05.2 The role of FSH in causing eggs to mature in the ovary was known by almost two-thirds of students, although many thought it caused the breakdown of the uterus lining.

05.3 Given that a sperm cell could survive inside a woman's reproductive organs for five days and an egg for one day, with ovulation on day 14, the range of days when intercourse could result in fertilisation (i.e. 9 to 15) was correctly calculated by only one in twenty students. A wide range of suggestions was made, many of which bore little resemblance to the correct answer and it was difficult to understand how they had been arrived at.

05.4 Students who showed sufficient knowledge to get to Level 3 (about a quarter of students) frequently referred to condoms and the pill and how each of these works. Reference to the patch, an implant or the diaphragm were commonly made. Some students went somewhat over the top and suggested that castration (often in the vernacular) was an appropriate method of contraception and although this would be effective, the method was not credited. Weaker students often gave a list of methods but were unable to explain how they work. The most commonly understood method was the use of the condom, often described as stopping sperm from reaching the woman's body, the vagina or the egg.

Answer 08 · 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.

4.5.3.5 Contraception

Answer 08 · 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.