

The menstrual cycle and fertility control: practice questions

5 questions • 21 marks • mark scheme at the back

For Edexcel GCSE Biology 1BI0 and Combined Science 1SC0. **Triple only** is not in Combined Science. **Higher tier** is only on the Higher paper.

Name

Total / 21

- 1** Describe the stages of the menstrual cycle, including the roles of oestrogen and progesterone. **[4 marks]**

- 2** **Higher tier** Explain how the interactions of FSH, LH, oestrogen and progesterone control the menstrual cycle, including the repair and maintenance of the uterus wall, ovulation and menstruation. **[6 marks]**

3 The contraceptive pill contains oestrogen and progesterone. Explain how the pill prevents pregnancy. **[3 marks]**

4 A couple are choosing between the contraceptive pill and condoms. Evaluate the two methods. **[4 marks]**

5 **Higher tier** **[4 marks]**
(a) Explain how hormones are used in IVF treatment. (2) (b) Explain how clomifene therapy helps a woman who does not ovulate to become pregnant. (2)

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [4]

- the uterus lining breaks down / menstruation happens around days 1 to 5 (1) allow bleeding
- oestrogen causes the repair / growth of the uterus lining (1)
- an egg is released (ovulation) around day 14 (1)
- progesterone maintains the uterus lining (1) allow until around day 28

2. [6] **Higher tier**

Level 3 5-6	A detailed and logical explanation that links all four hormones to the correct effects, including how some hormones stimulate or inhibit others, and covers repair and maintenance of the lining, ovulation and menstruation.
Level 2 3-4	Some explanation linking at least two hormones to correct effects. Some interactions are given but one stage, such as menstruation, may be missing or unclear.
Level 1 1-2	A few simple statements about hormones or stages with little or no explanation of how they interact.

Indicative content

- FSH from the pituitary gland causes an egg to mature in the ovary
- FSH stimulates the ovaries to produce oestrogen
- oestrogen causes repair and growth of the uterus lining
- high oestrogen inhibits FSH and stimulates the release of LH
- LH causes ovulation (around day 14)
- after ovulation progesterone is produced, which maintains the uterus lining
- progesterone inhibits FSH and LH so no more eggs mature
- if there is no pregnancy progesterone falls, the lining breaks down and menstruation happens

3. [3]

- the hormones stop eggs maturing / stop ovulation (1)
- so there is no egg to be fertilised (1)
- progesterone makes the mucus at the cervix thicker (1)
- so sperm cannot get through to the egg (1)
- Max 3

4. [4]

- the pill is very effective if taken correctly (1)
- the pill does not protect against sexually transmitted infections / can cause side effects / must be taken at the right time every day (1)
- condoms protect against sexually transmitted infections / have no hormone side effects (1)
- condoms can split or slip / are less effective if not used correctly (1)
- a justified conclusion, e.g. condoms are better if protection from infection is needed, or the pill if the most reliable contraception is wanted (1)
- Max 3 if only one method is evaluated
- Max 4

5. [4] Higher tier

- (a) the woman is given FSH and LH (1)
- to make several eggs mature in the ovaries (1)
- (b) clomifene stimulates the release of FSH and LH (1)
- so that eggs mature and ovulation happens (1)