

Full Higher Separate content. ★ = Higher Tier. ◆ = Separate Science only.

Q1. Describe the roles of FSH, oestrogen, LH and progesterone in the menstrual cycle.

[4 marks]

Q2. Explain how the combined contraceptive pill prevents pregnancy.

[3 marks]

★ HIGHER TIER

Q3. ★ Describe the process of IVF. Evaluate it as a treatment for infertility.

[4 marks]

Total: 11 marks

Q1 (4 marks)

Describe the roles of FSH, oestrogen, LH and progesterone in the menstrual cycle.

- FSH (pituitary): stimulates follicle/egg to mature; stimulates oestrogen production [1]
- Oestrogen (ovary): thickens uterus lining; at high levels triggers LH release; inhibits FSH [1]
- LH surge (pituitary): triggers ovulation (release of mature egg) on day ~14 [1]
- Progesterone (corpus luteum): maintains uterus lining; falls if no pregnancy → menstruation → new cycle [1]

Q2 (3 marks)

Explain how the combined contraceptive pill prevents pregnancy.

- Pill contains oestrogen and/or progesterone [1]
- These inhibit FSH release from the pituitary gland [1]
- Without FSH, no egg matures and no ovulation occurs → pregnancy cannot happen [1]

Q3 (4 marks) [★ HT]

★ Describe the process of IVF. Evaluate it as a treatment for infertility.

- FSH given to stimulate multiple egg production → eggs collected → fertilised by sperm in laboratory → embryo cultured 2-3 days → implanted in uterus [2]
- Benefit: allows couples with infertility (e.g. blocked fallopian tubes, low sperm count) to have biological children [1]
- Limitation: low success rate (~25-30% per cycle), expensive, multiple embryos created (ethical issue), multiple births risk [1]