# D3.1 Reproduction

What the Cell · DP Biology · worksheet · human statements D3.1.1–7

**Name** _____ **Date** _____ **Total** _____ / 51

**About 50 minutes,** or one section at a time. A calculator is allowed. The number of marks shows how many separate points to make. Look at the bold command term: "state" needs a brief answer, while "explain" needs reasons.

## Section A: Recall

9 marks

**1** **State** what is meant by a gamete. D3.1.2 **[1]**

**2** **State** one advantage of asexual reproduction. D3.1.1 **[1]**

**3** **State** where sperm are produced. D3.1.4 **[1]**

**4** **State** where fertilization usually takes place in humans. D3.1.6 **[1]**

**5** **State** the gland that secretes FSH and LH. D3.1.5 **[1]**

**6** **State** the hormone that triggers ovulation. D3.1.5 **[1]**

**7** **State** one function of the prostate gland. D3.1.4 **[1]**

**8** **State** the two hormones secreted by the corpus luteum. D3.1.5 **[2]**

## Section B: Understanding

15 marks

**9** **Compare and contrast** sexual and asexual reproduction. D3.1.1 **[3]**

| Sexual | Asexual |
| --- | --- |
| | |

**10** **Explain** the roles of meiosis and fertilization in a sexual life cycle. D3.1.2 **[3]**

**11** **Explain** why male gametes are small and numerous, while female gametes are large and few. D3.1.3 **[3]**

**12** **Outline** the events of human fertilization, from membrane fusion to the first division. D3.1.6 **[4]**

**13** **Distinguish** between positive and negative feedback, with one example of each from the menstrual cycle. D3.1.5 **[2]**

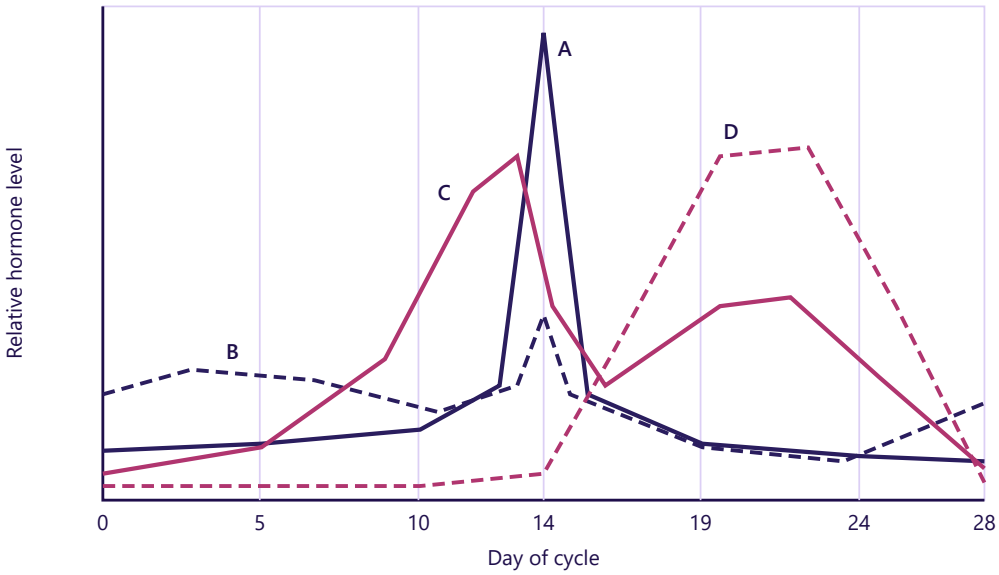
## Section C: Working with data

18 marks

The graph is a simplified sketch, not measured data. The table in question 15 is invented for practice.

**14** D3.1.5

The graph shows blood hormone levels during a 28-day menstrual cycle where no pregnancy occurs. Each hormone has its own scale, so only the shapes can be compared.




a **Identify** hormones A, B, C and D. **[2]**

b **State** the day on which ovulation is most likely. **[1]**

c **Explain** what causes the sharp rise in hormone A. **[2]**

d **Explain** why hormone D rises after ovulation. **[2]**

e **Explain** why menstruation begins at the end of the cycle. **[2]**

f **Predict** how the graph for hormone D would differ after day 24 if an embryo had implanted. **[2]**

**15** D3.1.7

The table shows the success of IVF at a fictional clinic.

| Age of patient / years | Under 35 | 35–37 | 38–40 | 41–42 | Over 42 |
|---|---|---|---|---|---|
| Live births per 100 treatments | 32 | 25 | 18 | 10 | 4 |

a **Describe** the trend. **[1]**

b **Calculate** the percentage change from the youngest to the oldest group. **[2]**

c **Suggest** two reasons for the trend, or why a clinic should be cautious about using it to advise one patient. **[2]**

d Some clinics place one embryo at a time, even though placing more may raise the chance of a pregnancy. **Suggest** why. **[2]**

## Section D: Longer answers

9 marks

**16** **Explain** how hormones are used in IVF treatment. D3.1.7 **[5]**

**17** **Draw** a labelled diagram of the female-typical reproductive system, seen from the front. D3.1.4 **[4]**