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Level: SL IB in Biology

Subject: Biology

Topic: IB SL Biology

Type: Topic Question

2002

XVIII

1583

All International Baccalaureate IB Topic Questions SL Biology

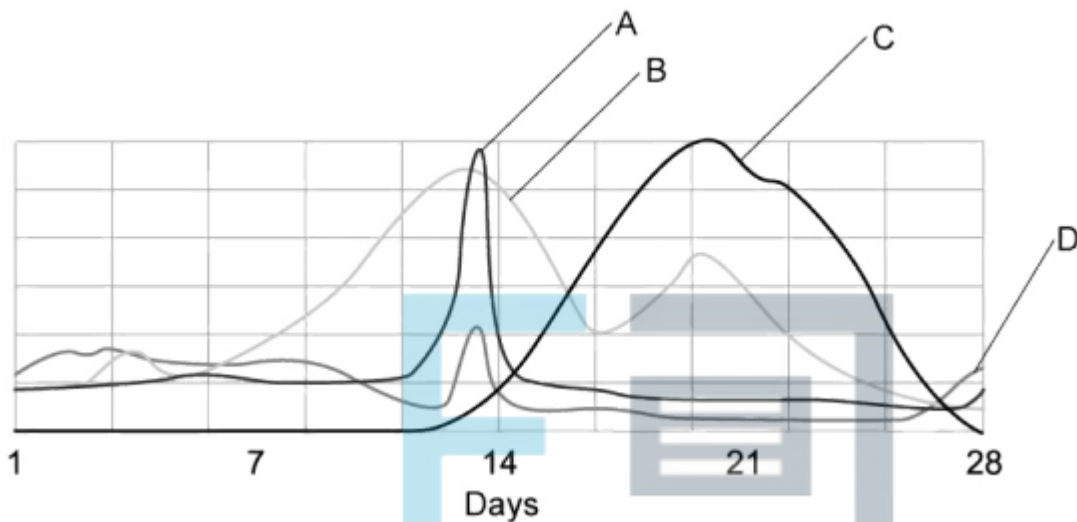
BIOLOGY

SL - IB

Key skills

Question 1.

The following graph shows the hormones involved in the menstrual cycle.



Which line represents the hormone responsible for ovulation?

- A. Line A.
- B. Line B.
- C. Line C.
- D. Line D.

[1 mark]

Question 2.

Polycystic ovary syndrome (PCOS) is a condition which may affect certain women during their childbearing years. Some of the most common symptoms of this condition is a failure to ovulate and irregular menstrual cycles. Women with PCOS have an increased risk of developing endometrial cancer.

What would be the most appropriate explanation for this?

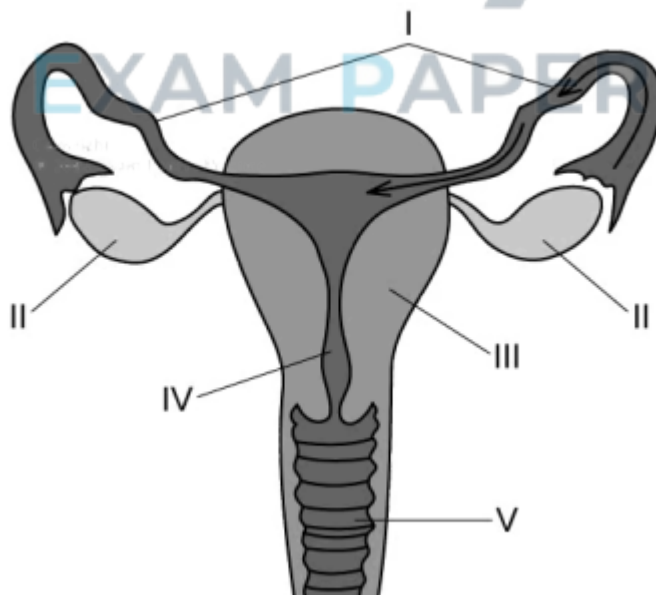
The endometrium will:

- A. Build up due to the lack of ovulation.
- B. Be shed too often.
- C. Build up due to the lack of menstruation.
- D. Be shed during ovulation.

[1 mark]

Question 3.

The diagram shows the female reproductive system.





Which row correctly identifies the structures?

| | I | II | III | IV | V |
|---|---------|---------|--------|--------|--------|
| A | Oviduct | Ovary | Uterus | Vagina | Cervix |
| B | Ovary | Oviduct | Uterus | Vagina | Cervix |
| C | Oviduct | Ovary | Uterus | Cervix | Vagina |
| D | Oviduct | Ovary | Cervix | Uterus | Vagina |

[1 mark]

Question 4.

The following diagram shows the steps followed during in vitro fertilization.



Which row correctly identifies the steps?

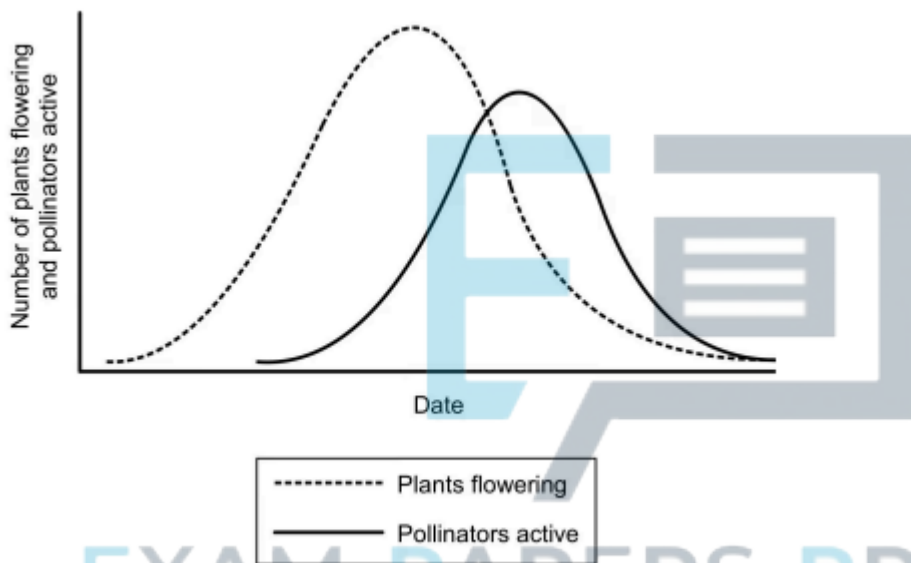
| | I | II | III |
|---|---------------|---------------|---------------|
| A | Ovulation | Fertilization | Egg washing |
| B | Ovulation | HCG injection | Fertilization |
| C | HCG injection | Ovulation | Fertilization |
| D | HCG injection | Egg washing | Fertilization |

[1 mark]

Question 5.

The graph below shows a possible future consequence of climate change on plant flowering dates and the dates on which pollinators are active.

What would the consequence of the data shown in the graph be for plants and pollinators, and why?



| | Consequence | Reason |
|---|--|--|
| A | No change in plant and pollinator populations | The same number of plants would be pollinated and pollinators would still get enough food |
| B | Decline in both plant and pollinator populations | Fewer plants would be pollinated and less food would be available for pollinators |
| C | Decline in plant population but not in pollinator population | Fewer plants would be pollinated but pollinators would still get enough food |
| D | Decline in pollinator population but not in plant population | The same number of plants would be pollinated but less food would be available for pollinators |

[1 mark]

Question 6.

Which of the following statements about pollen transfer are correct?

- I. Self pollination occurs when pollen is transferred between separate flowers on the same plant.
- II. Pollen transfer can be carried out by small mammals.
- III. Pollen can be transferred when birds consume fleshy fruits and then carry out egestion in another location.

- A. I only
- B. I and II only
- C. I and III only
- D. I, II, and III



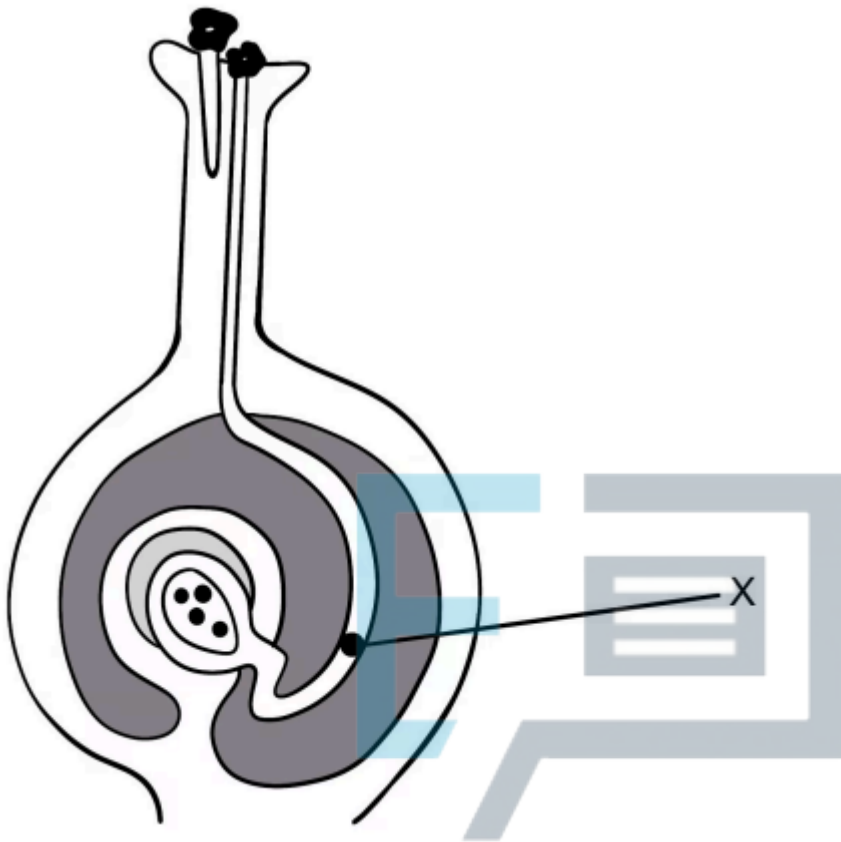
[1 mark]

Question 7.

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Which statement correctly describes the part labelled X in the image below?

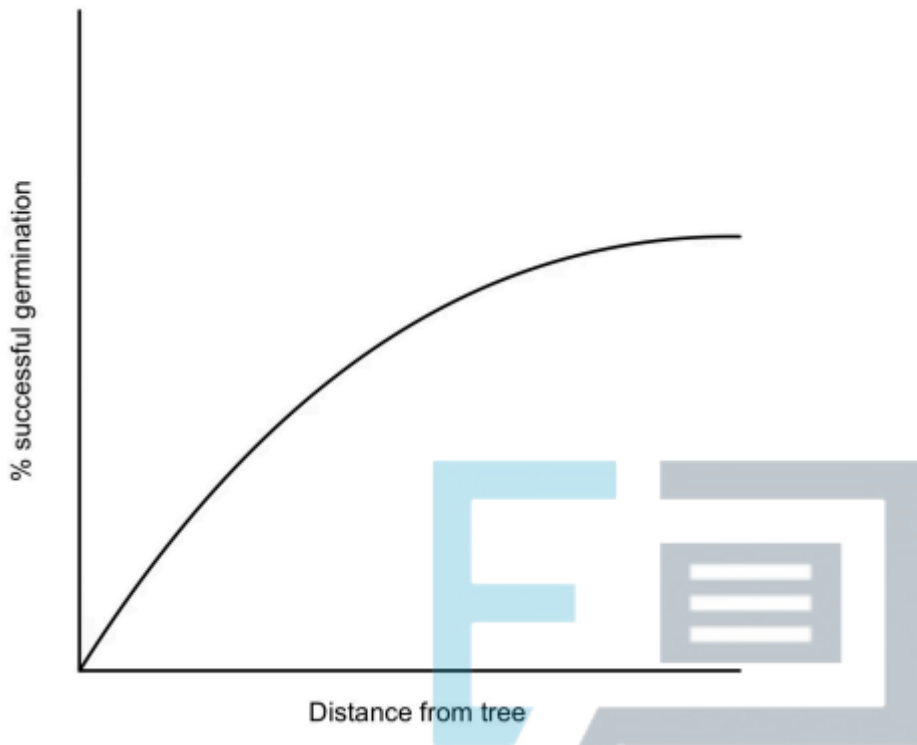


- A. Diploid pollen tube
- B. Haploid male nucleus
- C. Diploid zygote
- D. Haploid ovum

[1 mark]

Question 8.

The graph below shows the percentage of successful germination of seedlings in relation to the dispersal distance from the parent tree.



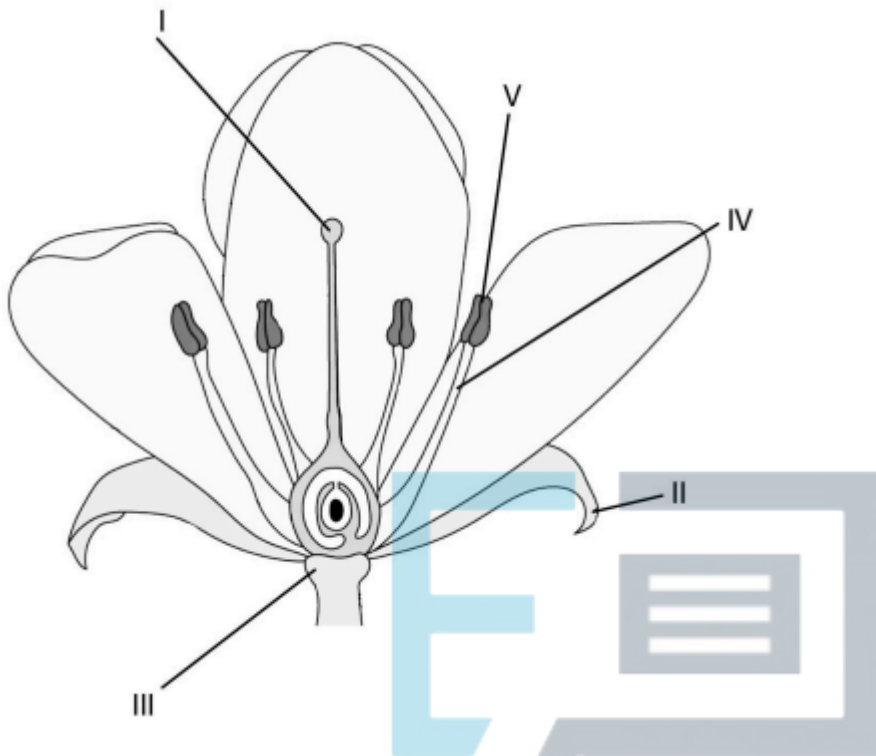
Which of the following explains the pattern shown in the data?

- A. Seeds that were dispersed close to the tree were eaten by squirrels
- B. Seeds dispersed too far away from the parent tree were too exposed to germinate successfully
- C. Fewer seeds were dispersed in the area closest to the tree
- D. Seeds dispersed too close to the parent tree may not germinate due to competition

[1 mark]

Question 9.

The image shows an animal pollinated flower



Identify the correct labels required for the image above.

| | I | II | III | IV | V |
|---|--------|------------|---------|----------|----------|
| A | Stigma | Receptacle | Nectary | Filament | Anther |
| B | Style | Receptacle | Sepal | Anther | Filament |
| C | Ovary | Stamen | Sepal | Anther | Filament |
| D | Stigma | Sepal | Nectary | Filament | Anther |

[1 mark]

Question 10.

The table below shows the effect of temperature on the germination of seeds. The seeds were first soaked in a range of temperatures before being germinated at either 20 °C or 35 °C.



| Temperature at which seeds were soaked in °C | Percentage of seeds which germinated | Percentage of seeds which germinated |
|--|--------------------------------------|--------------------------------------|
| | At 20 °C | At 35 °C |
| 20 | 100 | 91 |
| 25 | 100 | 45 |
| 30 | 43 | 3 |
| 35 | 24 | 0 |

Which of the following statements explains the results?

- I. Higher Temperatures slows down or stops germination
- II. Enzymes are denatured when seeds are grown at higher temperatures
- III. Seeds that were soaked at 20 °C germinated more successfully than seeds soaked at 25 °C
- IV. Soaking seeds at 35 °C had a less negative impact on germination compared to germinating at 35 °C

- A. II and IV
- B. I, II and IV
- C. I, II, III and IV
- D. I and II

[1 mark]