

Menstrual Cycle and Pregnancy

Question Paper

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| Level | Edexcel |
| Subject | Biology |
| Exam Board | GCSE(9-1) |
| Topic | Animal Coordination, Control and Homeostasis |
| Sub Topic | Menstrual Cycle and Pregnancy |
| Booklet | Question Paper |

Time Allowed: 38 minutes

Score: /31

Percentage: /100

1 Infertility can be treated by increasing the chance of ovulation occurring.

Ovulation is controlled by hormones.

(a) (i) Complete the sentence by putting a cross (☒) in the box next to your answer.

The hormone that stimulates the maturation of follicles in the ovary is

(1)

- A FSH
- B LH
- C oestrogen
- D progesterone

(ii) Infertility treatments, including the use of hormones, can stimulate ovulation.

Explain **one** disadvantage of treating infertility by using hormones to stimulate ovulation.

(2)

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(iii) Complete the sentence by putting a cross (☒) in the box next to your answer.

Ovulation during pregnancy is prevented by high levels of

(1)

- A FSH
- B LH
- C insulin
- D progesterone

(b) Monoclonal antibody technology is used in pregnancy tests and in the treatment of cancer.

(i) Explain how monoclonal antibodies are used to test for pregnancy.

(3)

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(ii) The use of monoclonal antibodies to treat cancer has advantages over the use of traditional chemotherapy and radiotherapy.

Explain the benefits of using monoclonal antibodies to treat cancer.

(2)

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(iii) Name the type of cell that produces the monoclonal antibodies used to treat cancer.

(1)

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(Total for Question 1 = 10 marks)

2 Blood tests can be used to check a person’s blood glucose and hormone levels.

Figure 4 shows the results of two blood tests carried out on three people to check their blood glucose levels. Person 1 is healthy.

| | blood glucose level (mmols/l) | |
|----------|-------------------------------|---------------------------------------|
| | after fasting for 12 hours | two hours after drinking 75 g glucose |
| person 1 | 5.4 | 6.4 |
| person 2 | 5.6 | 9.0 |
| person 3 | 7.8 | 12.1 |

Figure 4

(a) (i) Compare the glucose levels of person 1 with the glucose levels of person 2 after fasting for 12 hours.

(1)

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(ii) Compare the glucose levels of person 3 with the glucose levels of person 1, two hours after drinking 75g glucose.

(1)

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Person 3 cannot produce the hormone that controls blood glucose levels.

(iii) State the hormone that person 3 cannot produce.

(1)

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(b) Figure 5 shows the level of progesterone for a female during five different stages of the menstrual cycle.

| days in the menstrual cycle | progesterone level (nmol/l) |
|-----------------------------|-----------------------------|
| 1–9 | 1.85 |
| 10–14 | 1.48 |
| 15–17 | 14.28 |
| 18–23 | 35.27 |
| 24–28 | 17.11 |

Figure 5

(i) Describe the changes in progesterone levels during the 28-day cycle.

(2)

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(ii) Explain why progesterone levels changed following day 14.

(2)

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(iii) Use Figure 5 to explain if the female is pregnant.

(2)

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(b) The menstrual cycle is also controlled by hormones including progesterone.

(i) Complete the sentence by putting a cross (☒) in the box next to your answer.

Progesterone is produced by the

(1)

A corpus luteum

B glomerulus

C hypothalamus

D pituitary gland

(ii) Describe the effect of high levels of progesterone on the uterus lining during pregnancy.

(1)
