1.10 Human Reproduction: Organs, Gametes and the Menstrual Cycle: 10-minute Pack

EDEXCEL 4BI1 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Name the site in the male reproductive system where sperm are produced. Context: male reproductive organs.

(Total for Question 1 is 1 mark)

2 Name the female reproductive organ where fertilisation normally takes place. Context: female reproductive tract.

(Total for Question 2 is 1 mark)

3 State the function of the sperm duct (vas deferens) in the male reproductive system.

(Total for Question 3 is 1 mark)

4 Define fertilisation in humans, giving the cellular event that occurs. Context: conception and zygote formation.

(Total for Question 4 is 2 marks)

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5 A hormone graph from a single menstrual cycle shows a sharp LH peak at day 14 and rising oestrogen just before day 14. Using this context, state on which day ovulation is most likely to occur and explain why. Context: hormone graph interpretation.

(Total for Question 5 is 2 marks)

6 Describe one structural adaptation of a sperm cell and explain how it helps the sperm reach and fertilise an egg. Context: gamete adaptations.

(Total for Question 6 is 2 marks)

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Mark scheme · 1.10 Human Reproduction: Organs, Gametes and the Menstrual Cycle: 10-minute Pack

Question 1

testes or testis **B1**

Answer: Testes

Question 2

oviduct or fallopian tube **B1**

Answer: Oviduct (fallopian tube)

Question 3

transports sperm from the testes to the urethra or to the ejaculatory region **B1**

Answer: Transports sperm from the testes towards the urethra for ejaculation

Question 4

the fusion of a sperm and an egg **B1**

the nuclei of the sperm and egg fuse to form a zygote **B1**

Answer: Fusion of a sperm and an egg, when the nuclei of the two gametes fuse to form a zygote

Question 5

ovulation occurs at or around day 14 **B1**

because the LH surge triggered by rising oestrogen causes the egg to be released **B1**

Answer: Ovulation occurs at about day 14; the LH surge at day 14, caused by rising oestrogen, triggers release of the egg.

Question 6

identifies a structural feature, e.g. flagellum/tail, many mitochondria, small head with acrosome **B1**

explains how that feature helps, e.g. tail enables swimming; mitochondria provide ATP for movement; acrosome releases enzymes to penetrate egg membrane **B1**

Answer: Example: Flagellum (tail) that propels the sperm so it can swim to the egg. Many mitochondria in the midpiece provide ATP for movement.

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