



EXAM PAPERS PRACTICE

Boost your performance and confidence with these topic-based exam questions

Practice questions created by actual examiners and assessment experts

Detailed mark scheme

Suitable for all boards

Designed to test your ability and

11.4 Sexual Reproduction

Medium



BIOLOGY

IB HL

11.4 Sexual Reproduction

Question Paper

Course	DP IB Biology
Section	11. Animal Physiology (HL Only)
Topic	11.4 Sexual Reproduction
Difficulty	Medium

EXAM PAPERS PRACTICE

Time allowed: 20
Score: /10
Percentage: /100

Question 1

Which of the following statements about spermatogenesis are correct?

- I. Spermatogenesis involves meiosis and mitosis.
- II. Spermatogonia form from the germinal epithelium.
- III. Primary spermatocytes form by differentiation from spermatids.

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

[1 mark]

Question 2

Some of the stages of oogenesis are listed below.

- I. The oogonia enter meiosis I.
- II. Ovulation releases the secondary oocyte from the ovary.
- III. Cells in the germinal epithelium divide by mitosis.
- IV. FSH stimulates a primary follicle to mature and divide.
- V. The secondary oocyte completes meiosis II.

Which of the following gives the correct process of oogenesis?

- A. III → I → IV → V → II
- B. IV → III → I → V → II
- C. III → I → IV → II → V
- D. III → IV → I → II → V

[1 mark]

Question 3

Which of the following does **not** form part of the fertilisation process in humans?

- A. The cortical granules release glycoproteins to harden the zona pellucida.
- B. The cell surface membranes of the oocyte and sperm cell fuse together.
- C. The sperm cell binds to proteins on the surface of the oocyte.
- D. Digestive enzymes released from the acrosome break down the zona pellucida.

Question 4

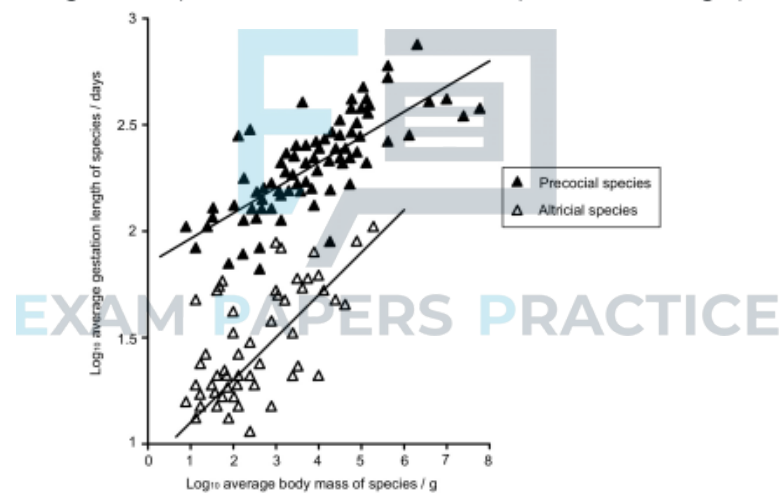
Which of the following gives a correct difference between a 48-hour-old embryo and a week-old blastocyst?

	Embryo	Blastocyst
A	Undergoes the process of mitosis	Begins the process of implantation
B	Contains around 50 cells	Contains around 100 cells
C	Located in the ovary	Located in the uterus
D	Moved by the action of hairs known as cilia	Moves due to the contraction of muscles in the uterus wall

[1 mark]

Question 5

What can be concluded about the gestation periods of different mammal species from the graph below?



- A. Precocial species have longer gestation lengths than altricial species.
- B. Species with a larger body mass have a longer gestation length.
- C. There is a positive correlation between body mass and gestation length for both precocial and altricial species.
- D. Precocial species need longer gestation lengths to allow them to give birth to less dependent offspring.

[1 mark]

Question 6

Which of the following statements about human chorionic gonadotropin (hCG) are correct?

- I. hCG is released by the ovaries.
- II. hCG stimulates the corpus luteum to continue secreting oestrogen and progesterone.
- III. Once hCG secretion stops, oestrogen and progesterone secretion also stops.

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

[1 mark]

Question 7

Which of the hormone functions shown below are correct?

	hCG	Progesterone	Oestrogen	Oxytocin
A	Stimulates release of hormones by the corpus luteum	Inhibits oxytocin production	Inhibits progesterone production	Stimulates relaxation of the cervix
B	Stimulates release of hormones by the corpus luteum	Stimulates oxytocin production	Inhibits progesterone production	Stimulates contractions in the muscles of the uterus wall
C	Causes loss of the uterus lining	Inhibits oxytocin production	Decreases sensitivity of uterus wall to oxytocin	Stimulates relaxation of the cervix
D	Inhibits loss of the uterus lining	Inhibits oxytocin production	Increases sensitivity of uterus wall to oxytocin	Stimulates contractions in the muscles of the uterus wall

[1 mark]

Question 8

Which of the following statements can be correctly applied to the placenta?

- A. Substances that move across the placenta from mother to foetus include oxygen, glucose, antibodies, carbon dioxide, and urea.
- B. The placenta is needed because the surface area to volume ratio of the foetus becomes larger as it grows.
- C. The placenta releases the hormone oxytocin in the late stages of pregnancy.
- D. The placenta enables the passage of antibodies by the process of endocytosis.

[1 mark]

Question 9

Why was it important to carry out a full risk analysis of the female contraceptive pill?

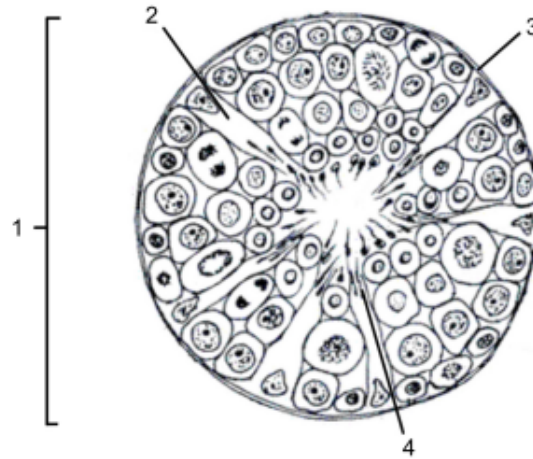
- A. The contraceptive pill could lower birth rates around the world.
- B. There is currently not enough evidence to prove a causal link between the female contraceptive pill and feminisation in fish.
- C. The synthetic oestrogen in the contraceptive pill can make its way into bodies of water where it can have previously unforeseen consequences.
- D. Some people have moral objections to the use of birth control.

[1 mark]



Question 10

Which structures have been identified in the cross-section through part of a testis shown below?



	1	2	3	4
A	Germinal epithelium	Sertoli cell	Cell surface membrane	Mature sperm
B	Seminiferous tubule	Sertoli cell	Germinal epithelium	Spermatid
C	Epididymis	Leydig cell	Testis endothelium	Spermatocyte
D	Seminiferous tubule	Leydig cell	Germinal epithelium	Mature sperm