

A Level Biology B

H422/02 Scientific literacy in biology

Question Set 2

1. (a) (i) Oogenesis occurs in the ovaries of female mammals, resulting in the production of gametes.

Name the type of nuclear division that results in the production of **secondary** oocytes from **primary** oocytes during oogenesis.

[1]

- (ii) Complete the table below to indicate the stage and type of nuclear division in which the events being described occur.

Event	Type of nuclear division	Stage in nuclear division
Chromosomes line up on the equator; there is no association between homologous chromosomes.		
Homologous chromosomes form bivalents.		
Homologous chromosomes separate and are pulled to opposite poles.		
Crossing over occurs.		

[4]

- (b) (i) Fig. 2.1 shows how oestrogen production varies throughout life in human females.

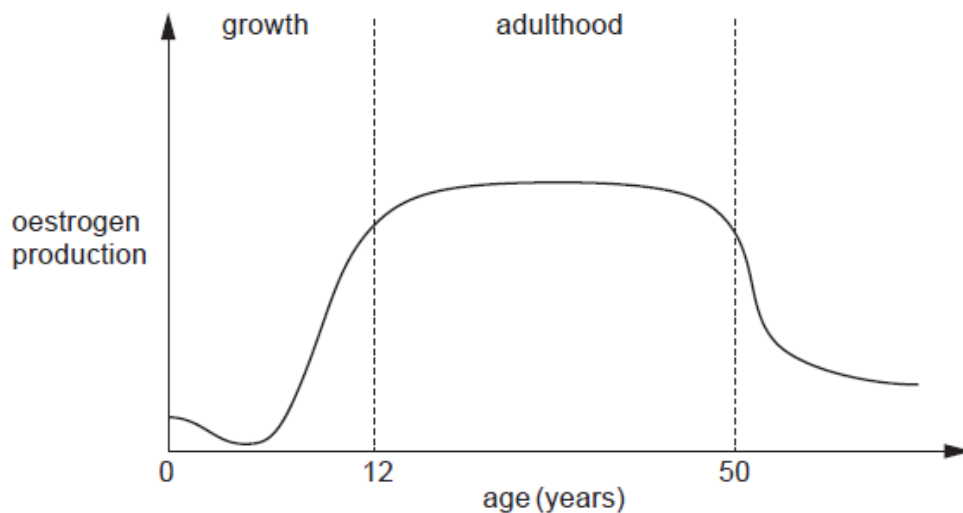


Fig. 2.1

Explain how the rapid increase in oestrogen production towards the end of the growth phase results in the release of secondary oocytes.

[2]

- (ii) Changes occur to the cells within ovaries over the course of a woman's lifetime.

Use the data in **Fig. 2.1** to explain the role of oestrogen production in the changes to ovarian cells that occur during adulthood.

In your answer you should refer to the stages of nuclear division that occur.

[3]

- (c) (i) **Fig. 2.2** shows how the number of ovarian follicles changes from birth to 50 years of age.

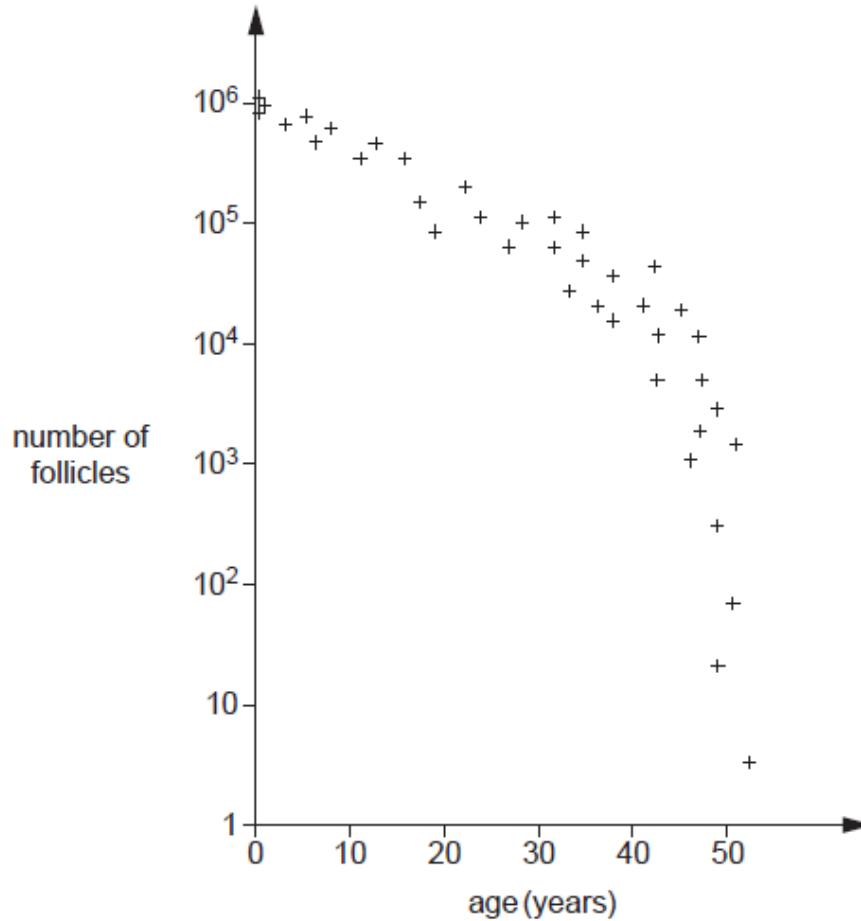


Fig. 2.2

Using the data in Fig. 2.2, describe **and** explain the relationship between the number of follicles and age.

[4]

- (ii) Name the biological process that occurs as a result of changes in the number of follicles between 45 and 50 years of age.

[1]

- (iii) Describe **two** symptoms that women may experience during this process.

[1]

Total Marks for Question Set 2: 16

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