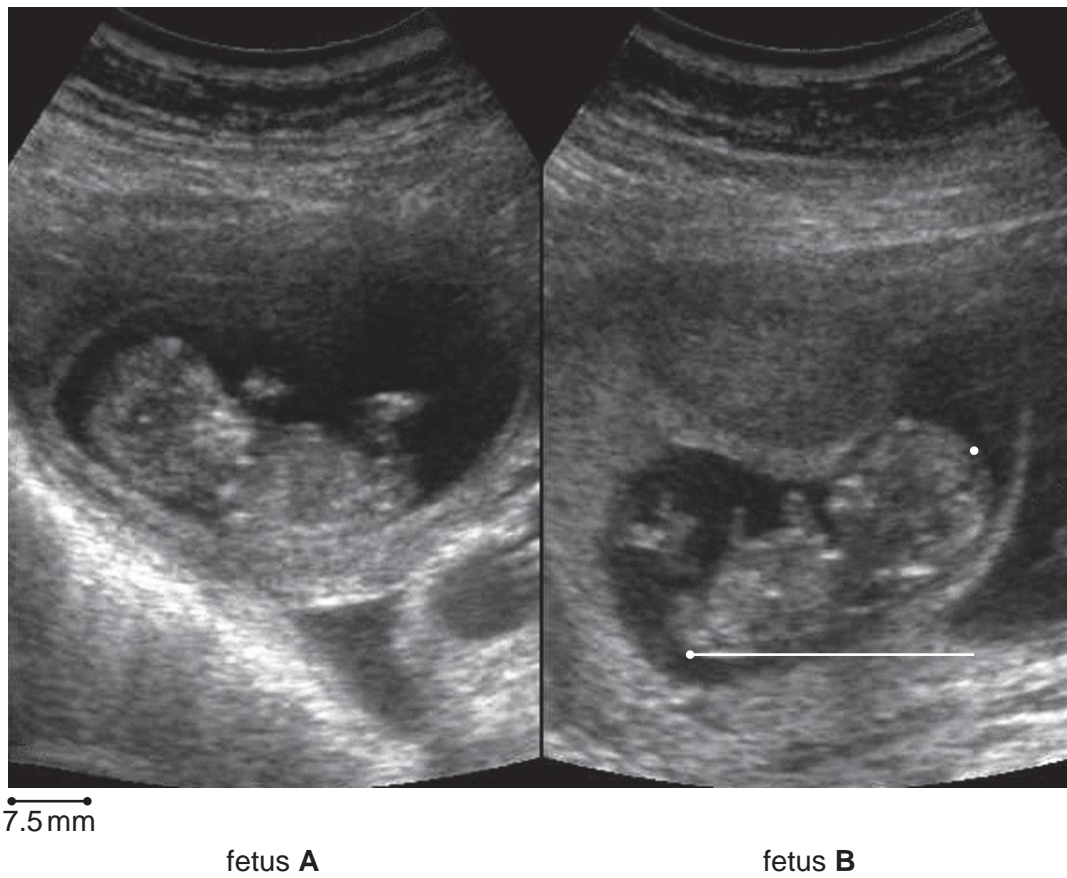


**AS Level Biology B**  
**H022/01** Foundations of biology

**Question set 3**

1 Fig. 1.1 is a photograph of non-identical twin fetuses, **A** and **B**, in the uterus.



(a) (i) Describe how the diagnostic technique, used to produce the photograph in Fig. 23.1, is used to measure the biparietal diameter of a fetus [3]

(ii) Calculate the crown-rump length (CRL) of fetus **B** in Fig. 1.1.

Use the white line as an indicator for the positions of the crown and rump of the fetus.

Show your working and give your answer to **two** significant figures.

= ..... mm [2]

(iii) Fig. 1.2 shows a fetal growth chart.



**Fig. 1.2**

Using Fig. 1.2 and your calculation in (a)(ii), estimate the gestational age of fetus **B**.

[1]

(iv) Suggest **two** factors that must be taken into account when using the growth chart in Fig. 1.2 to estimate the gestational age of fetus **B**.

[2]

(b) Non-identical twins show as much genetic variation as other offspring.

Using the most appropriate word(s), complete the sentences below about the processes that contribute to genetic variation.

Two processes occur during meiosis that contribute to genetic variation. During ..... of meiosis 1, .....chromosomes begin to pair up to form a bivalent. Crossing over occurs in which sister ..... exchange genetic information at points of cross over called .....

As meiosis 1 continues, alignment on the equator of the spindle and separation of the chromosomes in each pair to opposite poles of the cell is random. This process is called .....

[5]

**Total Marks for Question Set 3: 13**



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