

## **A Level Biology B**

**H422/02** Scientific literacy in biology

### **Question Set 19**

1. (a) (i) Meiosis is the nuclear division that forms gametes.  
Explain why meiosis is referred to as a **reduction** division. [1]
- (ii) Errors in meiosis can lead to chromosome mutations.  
State the name of an event in meiosis that leads to chromosome mutations. [1]
- (iii) State the name of one syndrome caused by a chromosome mutation. [1]
- (iv) Some cancers that develop later in life are caused by chromosome mutation.  
Suggest why these cancers are unlikely to be the result of errors in meiosis. [1]
- (b)\* Events before conception and during pregnancy can have a significant effect on the health of a baby.  
  
Recently, scientists found there is only a small correlation between light alcohol consumption and small birth weight.  
  
They found no evidence for a link between light-to-moderate alcohol consumption and the more serious effects of fetal alcohol syndrome, which can be caused when a mother drinks alcohol heavily during pregnancy.  
  
Using this information and your own knowledge about the effects of alcohol on fetal development, evaluate this advice from the NHS website:  
  
'The Chief Medical Officers for the UK recommend that if you're pregnant or planning to become pregnant, the safest approach is not to drink alcohol at all.'  
  
[6]

**Total Marks for Question Set 19: 10**

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