

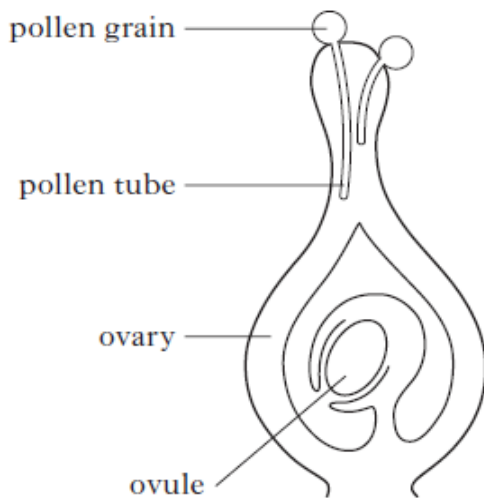
**Key Area 2.3**

**Homework 4**

1. The following statements refer to the stages that occur after pollination

- A Fertilisation takes place.
- B A pollen tube grows out from a pollen grain.
- C The ovule forms a seed and the ovary forms a fruit.
- D The pollen tube grows down through the stigma.
- E The male gamete moves towards the ovule.
- F The pollen tube grows through the ovary wall

(a) Use the letters of the statements to complete the sequence of stages  
KU1



(b) (i) Copy the diagram below and draw an X on the following diagram to show where the pollen tube reaches when its growth is completed.  
KU1

(ii) Describe the function of the pollen tube.  
KU1

2. The diagram below represents a wind-pollinated flower.

The chart below shows the peak times for airborne pollen from six wind-pollinated plants.

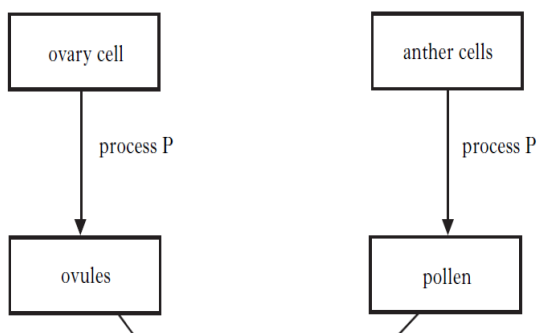


Type of plant	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hazel		█	█	█	█							
Yew		█	█	█	█							
Willow			█	█	█	█						
Oil seed rape				█	█	█	█					
Grass						█	█	█	█	█		
Nettle						█	█	█	█	█		

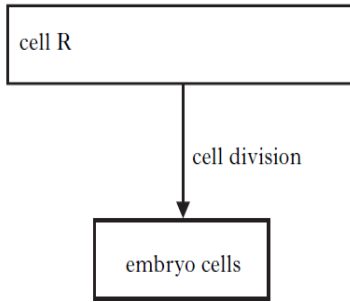
- (i) How many months are shown to be free of pollen?  
S1
- (ii) The above plants account for most pollen allergy in Britain. Most allergy sufferers are affected for 3- 4 months each year. Give a conclusion which can be drawn about pollen allergy from these facts. A1
- (iii) In summer, air carries an average of 100 pollen grains per litre. If a person inhales 12.6 litres of air per minute, calculate the total number of pollen grains inhaled each hour.  
Space for calculation

\_\_\_\_\_grains per hour  
PRO1

3. The diagram below shows a summary of events that occur during reproduction in a flowering plant.



- (i) Complete the diagram by entering the name of cell type R. KU1
- (ii) Which process in the diagram represents fertilisation? KU1
- (iii) Complete the following table by inserting a tick (✓) in the correct boxes to show which of the cells in the diagram have a double or single set of chromosomes



<i>Cell</i>	<i>Double set of chromosomes</i>	<i>Single set of chromosomes</i>
anther		
ovule		
R		
embryo		