2 **(a)** Meiosis and cytokinesis occur in the male reproductive organs (anthers) of plants to make pollen grains. Cells which carry out meiosis are known as pollen mother cells.

Fig. 2.1 shows five stages of meiosis in a pollen mother cell.

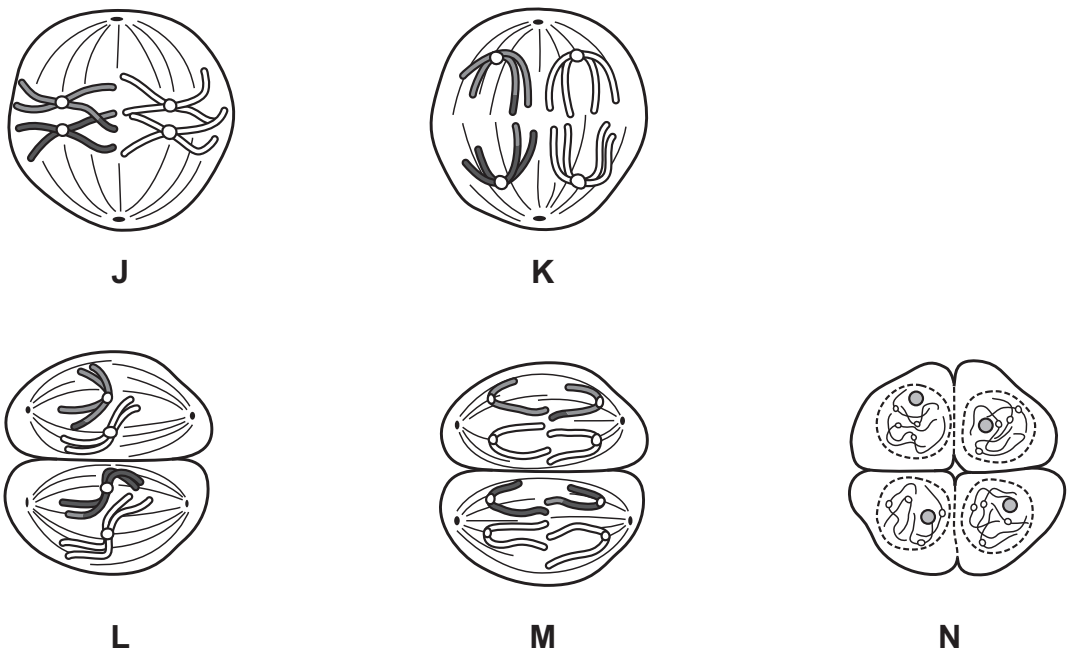

Fig. 2.1

Use the letters **J**–**N** in Fig. 2.1 to state **all** the stages that show:

anaphase .....

cells containing pairs of homologous chromosomes .....

crossing over .....

haploid cells .....

[4]

(b) Maize plants have male and female reproductive organs on the same plant. The male anthers are located on structures known as tassels. When selective breeding is carried out to create an F1 hybrid, the tassels are removed.

Suggest why the tassels are removed when selective breeding is carried out to create an F1 hybrid.

.....

.....

.....

..... [2]

(c) Outline how selective breeding is used to produce vigorous, uniform varieties of maize.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 10]