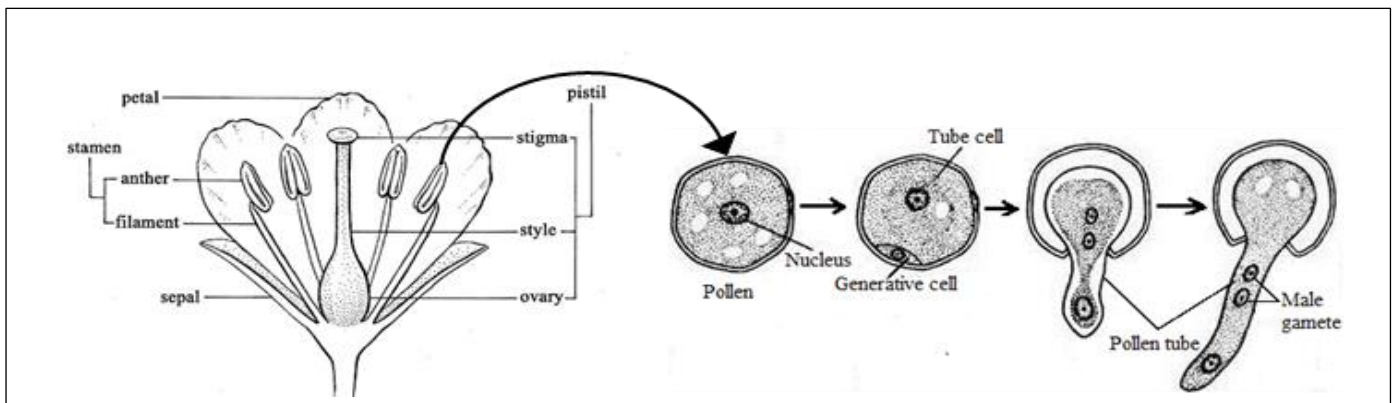


Name of the student: Date:/...../.....

Microsporogenesis

The formation of microspores (male gamete) inside the pollen sac of flowering plant is called microsporogenesis.



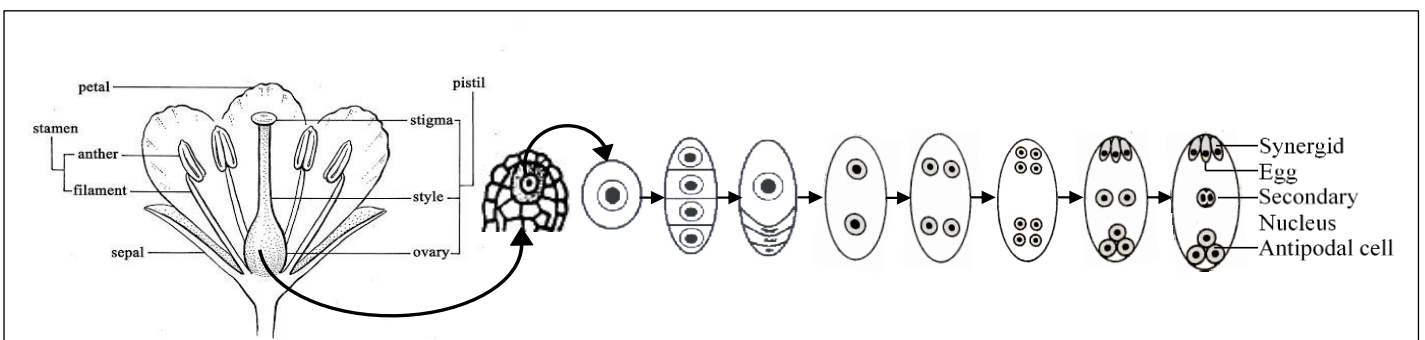
Steps of microsporogenesis:

- 1) Four pollens (n) are produced from a pollen mother cell by the process of meiosis.
- 2) Shortly after maturity, the pollen starts to germinate in the pollen sac.
- 3) The nucleus of the pollen divides through mitotic division to produce two cells. One is large which is called tube cell and another is small which is called generative cell.
- 4) The tube cell turns into pollen tube and generative cell divides to produce two male gametes.

[N. B: — Division of generative cell takes place in the pollen or pollen tube.]

Megasporogenesis

The formation of megaspore (female gamete) inside the ovule of flowering plant is called megasporogenesis.



Steps of megasporogenesis:

- 1) Near the micropyle, being nourished in the nucellus (central part of an ovule) of an ovule, a cell starts to become larger.
- 2) The cell divides to produce four haploid cells through meiotic division.
- 3) Every cell, except the smallest one, gets disintegrated.
- 4) Growing gradually, the larger cell is transformed into an embryo sac.
- 5) The nucleus of the cell is haploid and divides to produce two nuclei.
- 6) These two nuclei take position in two opposite poles.
- 7) Next, each of these two nuclei consecutively divides twice to produce four nuclei.
- 8) In the next stage, two nuclei from the two poles come to the middle to fuse to form secondary nucleus ($2n$).
- 9) The nuclei in the two poles turn into cells with some amount of cytoplasm.
- 10) Collectively, the combined structure of the three cells near the micropyle is called egg apparatus in which the middle one is egg and the two on the side are called synergid cells.
- 11) The cells in the opposite pole to the egg apparatus are called antipodal cells.

[N. B: — The mass of tissue in center of the ovule of a flower that contains the embryo sac is called nucellus.]

Q. Write down the differences between microsporogenesis and megasporogenesis.

Microsporogenesis	Megasporogenesis