Q) "Variations that confers an advantage to an individual organism only will survive on a population." Justify.

Variations is the difference in the characters or traits among the individual of a specie sexual reproduction of organisms produces variation. The variations produced in organisms during successive generations get accumulated in the organism the significance of variation shows upon only if it continues to be inherited by the offspring for several generation.

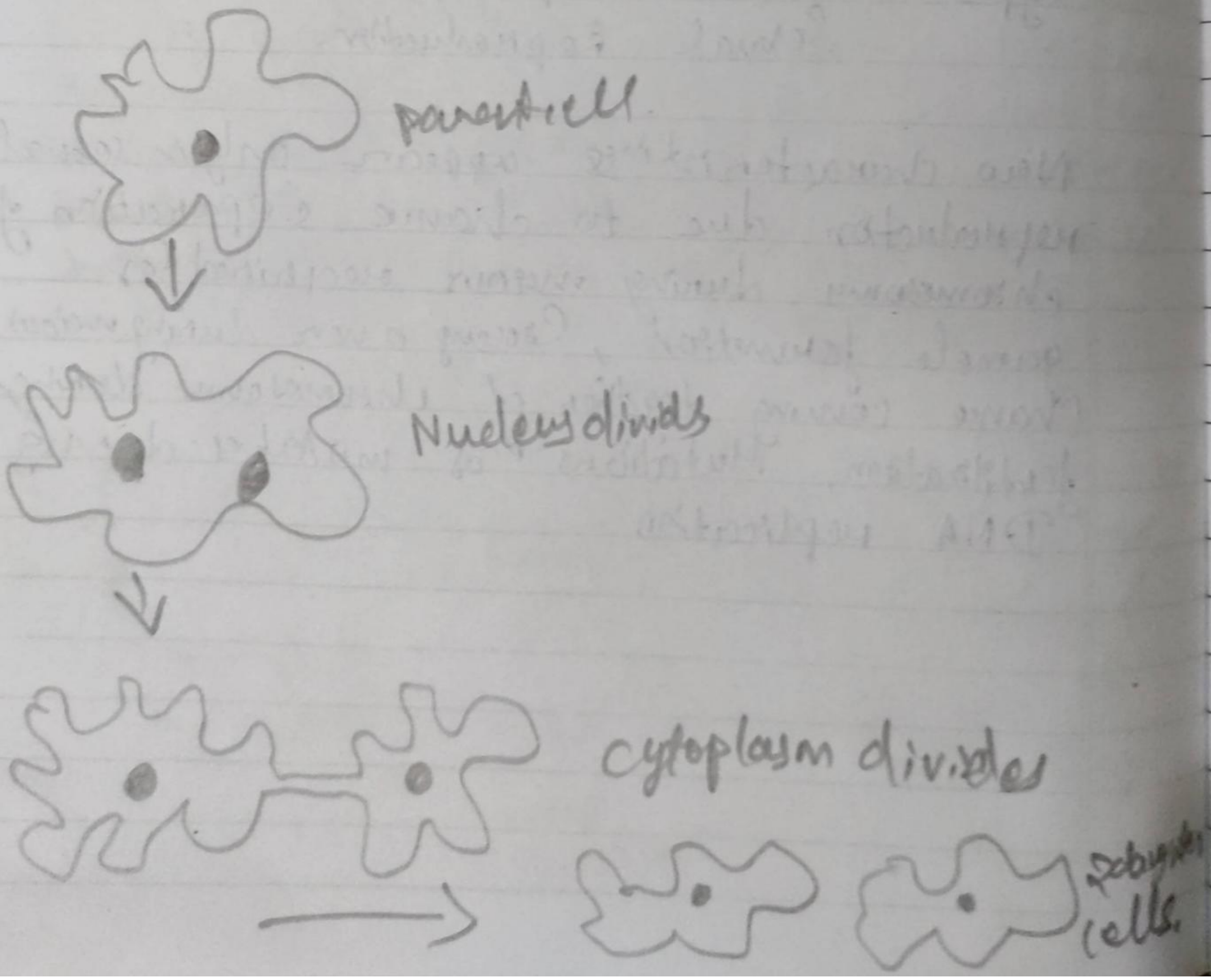
Q2) Illustrate the following with the help of suitable diagram.

i) Binary fission in Amoeba

ii) Multiple fission in Amoeba.

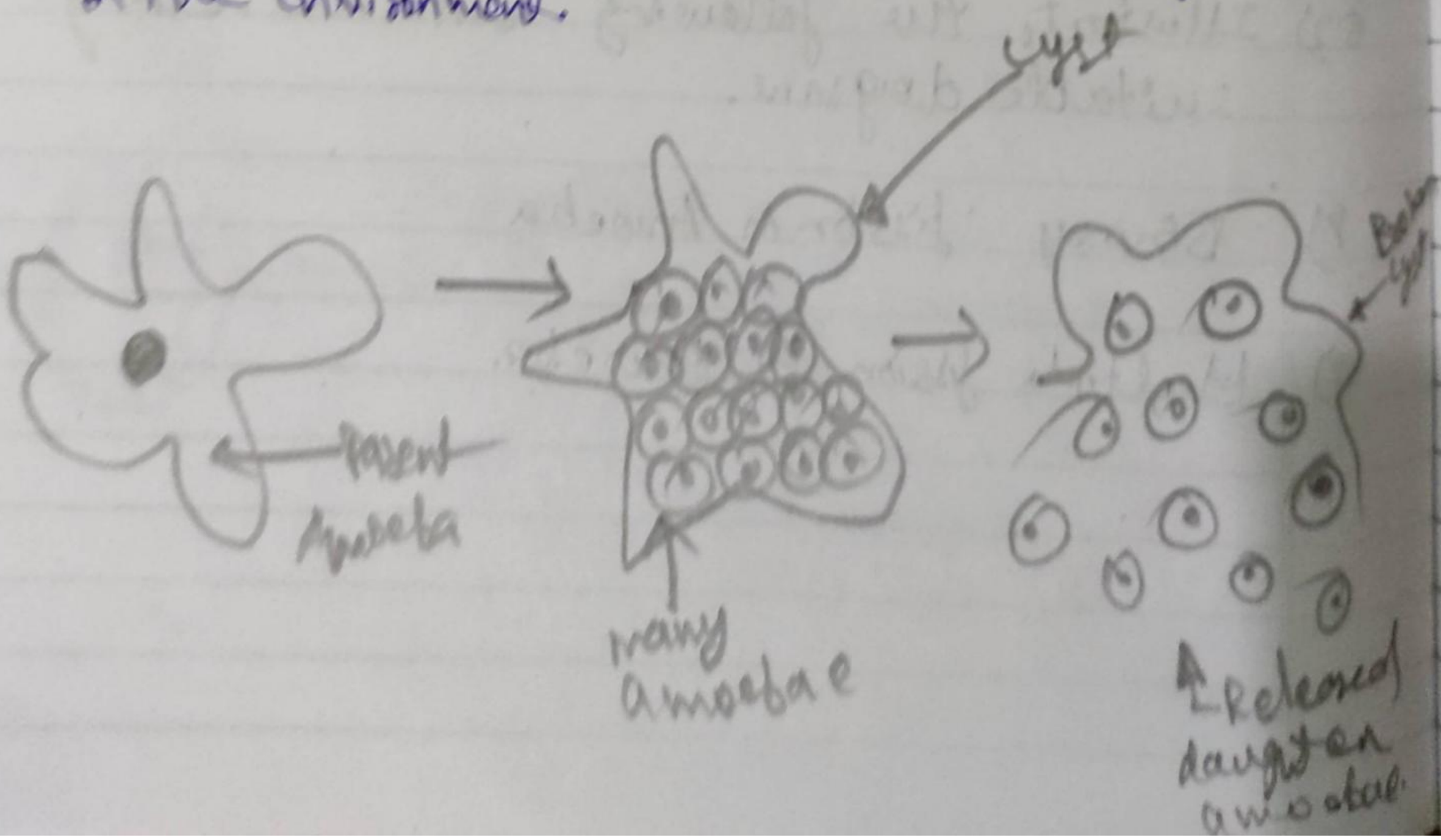
Binary fission in amoeba

Amoeba is a unicellular organism, & just like bacteria, it reproduces through binary fission. After replicating its genetic material through mitotic division, the cell divides into two equal-sized daughter cells. In this method two similar individuals are produced from a single parent cell.



Multiple fission in Amoeba

It is a unicellular organism. To survive & reproduce under unfavorable conditions, Amoeba withdraws its ~~feeds~~ pseudopodia and becomes almost round in shape & secretes a hard covering around its cell called a cyst. The cyst forms a thick protective coating around the cell. Inside the cyst, the nucleus of the Amoeba undergoes repeated divisions to form many nuclei. After nuclear division occurs. Hence eventually, many new daughter cells are formed from the parent cell. On the return of favorable conditions, the cyst bursts open to release these daughter cells in the environment.



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3Q) what is reproduction? What are its 2 types? Which one of the two confers new characteristics on the offspring & how?

Reproduction is the process of producing new young individuals of similar type by the mature individuals.

Types : Asexual Reproduction
Sexual Reproduction

New characteristics appear only in sexual reproduction due to chance separation of chromosomes during meiosis required for gamete formation, Crossing over during meiosis. Chance coming together of chromosomes during fertilization, Mutations or mistakes during DNA replication