

1. What happens when:

(a) Accidentally planaria gets cut into many pieces?

A It will undergo a process known as regeneration due to which each piece will grow into new planaria organisms.

(b) Bryophyllum leaf falls on wet soil?

A The buds that are produced in the notches along leaf will develop into new plants by process known as vegetative propagation.

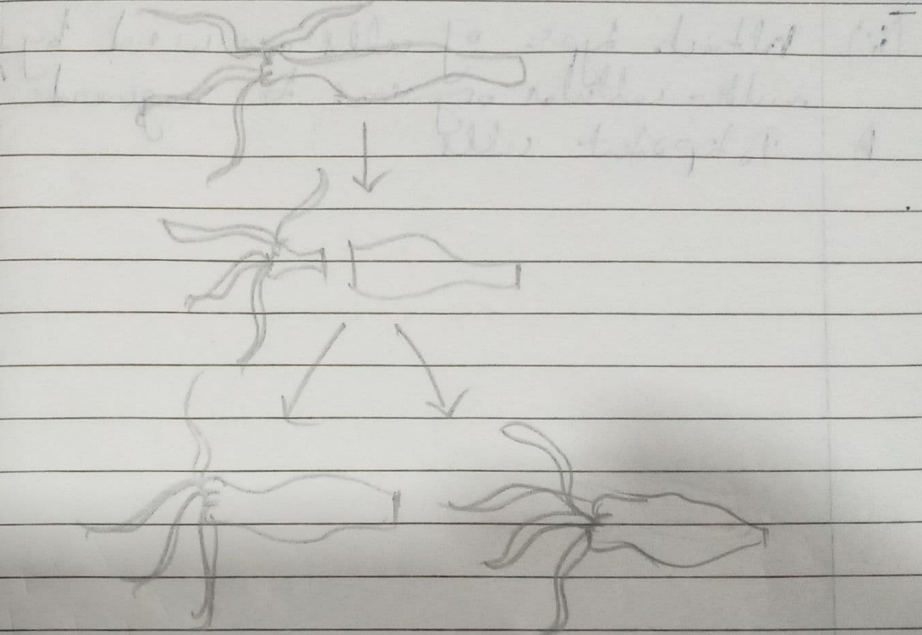
(c) On maturation sporangia of Rhizopus burst?

A The spores present inside it spread in the open environment. These, with the help of different agents, they are carried to different places & when they land on favourable surface, they start growing & produce new organisms.

2. (i) Differentiate between binary & multiple fission. Name an organism that reproduces by multiple fission.

A

- A Binary Fission
- Forms two daughter individuals
 - Divides only once
 - No residue left
 - Take place in favourable conditions
 - Immortality is present
 - Ex - Amoeba
- Multiple fission
- Forms many daughter individuals
 - Divides repeatedly
 - Residue left
 - Take place in favourable as well as unfavourable conditions
 - Immortality is absent
 - Ex - Plasmodium



(ii) With the help of a diagram demonstrate vegetative propagation is beneficial to plants that are propagated axonally. Give two advantages.

- A. Advantage
- * This is quick method & by this new, flower or fruit can be produced early.
 - * This is more certain method of producing new plants than that of seed production.
 - * It is not economical for plants because no energy is wasted in producing large & showy petals, fruits, seeds, etc.

3. (i) With help of diagram demonstrate the power of regeneration as seen in Hydra.

- Hydra had been used as model of regeneration since time immemorial. One would think cells start to regenerate & grow into pre-existing cells.
- Hydra grows by continuously losing cells from its base & by budding.
- A gradient of inhibitor is produced by head. This prevents the formation of other heads.
- The concentration of inhibitor is reduced.
- The positional value increases locally.
- A new head is formed without any new growth.

(ii)

A

Which type of cells are used by such
multicellular organisms to regenerate?
Pluripotent cells