🔬 PRACTICAL QUESTIONS

Multiple Choice Questions

1. *Bryophyllum* can be propagated vegetatively by
(a) stem   (b) root
(c) leaf   (d) flower.

Ans.(c) : Bryophyllum reproduces vegetatively by developing adventitious buds on the margins of leaves.

2. Embryo sac is found in
(a) endosperm   (b) embryo
(c) ovule   (d) seed

Ans.(c)

3. Read the following step of budding in yeast.
(i) The bud get separated from the parent body and develops into a new individual.
(ii) The detached bud develops and gives rise to another baby buds.
(iii) A bud comes out in any direction.
The proper sequence of step is
(a) (iii), (i), (ii)   (b) (i), (ii), (iii)
(c) (iii), (ii), (i)   (d) (ii), (iii), (i)

Ans.(a) : In budding, an outgrowth develops on parent body. It grows in size, gets separated and matures into new organisms.

4. The given figure shows
(a) *Amoeba* undergoing binary fission
(b) yeast undergoing binary fission
(c) yeast undergoing budding
(d) *Amoeba* undergoing budding.
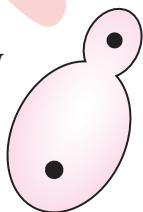
Ans.(c)

5. Which of the following diagrams does not show budding in yeast?

P   Q   R   S

(a) P   (b) Q   (c) R   (d) S
Ans.(b)

6. Ram, Rohan, Geeta and Sonam on observing slides of budding in yeast draw diagrams showing budding.

Ram   Rohan   Geeta   Sonam

The incorrect diagram has been drawn by
(a) Ram   (b) Rohan
(c) Geeta   (d) Sonam.
Ans.(a)

7. The type of asexual reproduction is
(a) budding   (b) fission
(c) regeneration (d) all of these.
Ans.(d)

8. Which of the following solutions is added to prepare a temporary slide of yeast culture?
(a) Distilled water
(b) 10% sugar solution
(c) 90% sugar solution
(d) Dilute hydrochloric acid
Ans.(b)

9. The event that first occurs during binary fission of *Amoeba* is
(a) division of cytoplasm
(b) formation of two daughter cells
(c) division of nucleus (karyokinesis)
(d) enlargement of nucleus.
Ans.(c)

10. A chain of yeast cells is formed because
(a) yeast cells do not separate after budding
(b) daughter cells are unable to survive without parent cells
(c) buds reproduces as soon as they are formed
(d) daughter cells stick together with the help of mucus.
**Ans.(a)**

Subjective Questions

11. Rohan and Shyama were asked to observe the permanent slides showing different stages

of binary fission in *Amoeba* under high power of a microscope.

(i) Which adjustment screw (coarse/fine) would you suggest Rohan and Shyama to move to focus the slides?

(ii) Draw three diagrams in correct sequence showing binary fission in *Amoeba*.

Ans. (i) Fine adjustment screw

(ii) Diagram showing binary fission in *Amoeba* is :
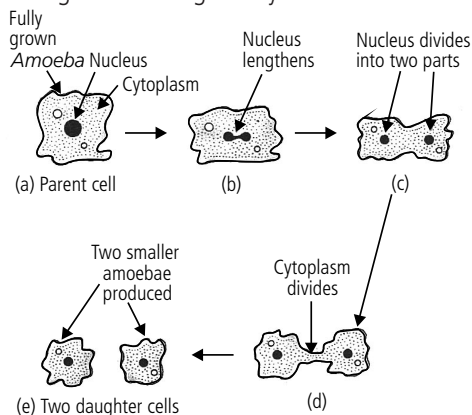
12. In which type of asexual reproduction, two individuals are formed from a single parent and the parental identity is lost? Draw the initial and the final stages of this type of reproduction. Also state the event with which this reproduction starts.

Ans. Binary fission is the type of asexual reproduction where two individuals are formed from a single parent and parental identity is lost. The unicellular organisms like *Amoeba*, *Paramecium*, etc. reproduce through binary fission. This process starts with karyokinesis. When the *Amoeba* cell grows fully and reaches its maximum size, then first the nucleus of *Amoeba* lengthens and divides into two parts, followed by division of cytoplasm, ultimately resulting in two daughter individuals. *For diagram refer to answer 11(ii).*

13. Among binary fission and budding which one is faster process of reproduction when compared to sexual reproduction? Justify.

Ans. Both binary fission and budding are faster processes of reproduction than sexual reproduction, but binary fission is more faster as it takes 2-3 hours, whereas budding requires 8-10 hours.

14. During practical examination, Rohit was given two permanent slides showing (a) budding in *Hydra* (b) binary fission in *Amoeba*. How will he compare the processes of binary fission and budding seen in the slides?

Ans. After studying the slides carefully Rohit inferred that in binary fission, the entire organism (*Amoeba*) divides into two, while in budding (*Hydra*), buds appear from the sides of the parent organism.

15. Enlist the economic importance of yeast.

Ans. Economic importance of yeast are :

(i) Yeast is of greatest importance to mankind because of its property of alcoholic fermentation. In the absence of oxygen, yeast converts sugar of wine grapes into alcohol and carbon dioxide.

(ii) Yeasts also produce vitamin B_1 (riboflavin).

(iii) Yeasts are used in making bread in bakeries.

16. Name the type of asexual reproduction in which a multicellular organism breaks up to form two or more daughter organisms. Give example also.

Ans. This type of reproduction is known as fragmentation and it is seen in *Spirogyra*.

17. While observing a moist slice of bread with the help of a magnifying glass some cottony mass is observed. What are these cottony masses?

Ans. The white cottony mass is due to growth of bread mould (*Rhizopus*). The spores of fungus are present in the air. They settle on the moist bread and germinate to form white cottony mass of vegetative mycelium. The vegetative mycelium develops asexual sporangia which are black in colour. Each sporangium contains hundreds of minute black-coloured spores. These spores are dispersed in air to germinate on suitable substratum.

18. Rohan was observing the different parts of seeds. What was the brown coloured part that he observed?

Ans. The brown coloured part is testa that encloses two cotyledons laden with stored food material. A small embryo consisting of radicle and plumule lies in between the two cotyledons.

19. Name the asexual method through which *Planaria* reproduces. Describe how it is carried out.

Ans. *Planaria* reproduces through regeneration. Regeneration is carried out by specialised cells. These cells proliferate and make large numbers of cells. From this mass of cells, different cells undergo changes to become various cell types and tissues.

20. Name the solution poured in a conical flask to observe asexual reproduction in yeast by budding.

Ans. 10% sugar solution, prepared by mixing 100 mL of water and 10 gm of sugar.