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Class: X
Subject: Biology
Topic: How Do Organisms Reproduce?
No. of Questions: 20

Q1. Which of the following animals has the ability to regenerate its lost body parts?

a) Amoeba

b) Planaria

c) Paramecium

d) Euglena

Ans. (b)
Planaria is a simple, multicellular organism and it can regenerate its lost body parts by proliferation of cells, i.e. division of existing cells. Amoeba, Paramecium, and Euglena are unicellular organisms. They do not have differentiated body parts. In these if one cell is killed, the entire organism dies.

Q2. Which part of bryophyllum plant helps in vegetative propagation?

a) Roots

b) Leaves

c) Stem

d) Flowers

Ans. (b)
Leaves of Bryophyllum plant help in vegetative propagation. The notches of these leaves contain vegetative buds, which can grow to produce roots and small shoots that later make a new plant. Its root, stem or flowers have no such vegetative buds to take part in the reproduction process.

Q3. Binary fission occurs during _____.

a) favourable conditions

b) unfavourable conditions

c) hot conditions

d) humid conditions

Ans. (a)

Binary (Bi means two) fission produces only two daughter cells and occurs repeatedly, generation after generation, in short time intervals. This fast reproduction is possible only under favorable conditions of temperature, food and humidity. But under any unfavourable conditions like high or low temperature, low humidity or lack of food, multiple-fission occurs.

Q4. If hydra is cut into two parts, it does not die because _____.

a) it can form a bud

b) it can regenerate into two complete organisms

c) it can produce spores

d) the two parts are new individuals

Ans. (b)

On being cut, the two parts of hydra can regenerate the other part because it is a simple organism. Bud also helps it in reproduction but on being cut, regeneration ability plays the role. The two parts cannot be two individuals unless they regenerate.Lastly, hydra does not produce spores as it reproduces by budding.

Q5. Which of the following plants does not produce seeds?

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a) Apple

b) Pear

c) Peach

d) Banana

Ans. (d)

As we know, apple, pear and peach have seeds. It is only banana that is seedless and has lost the capacity to produce seeds. In case of apple, the ability to produce seeds is there but they may not be viable.

Q6. 'Bread mould' reproduces by _____.

a) spore formation

b) regeneration

c) fission

d) budding

Ans. (a)

Bread moulds are a type of fungus and they generally need to produce a huge number of progeny so that a few may fall on suitable substratum (medium on which an organism depends for deriving its food) and grow. This large number is ensured by spore formation only. Regeneration, fission, and budding produce small number of progeny as compared to the number of spores because one sporangium may produce thousands of spores while in the other three cases, the number of new organisms is limited to 2 or 3 after each cycle.

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Q7. Which life process is not essential for survival of individual life?

a) Digestion

b) Respiration

c) Excretion

d) Reproduction

Ans. (d)
For the survival of individual life, reproduction is not essential. An organism will die without digestion, respiration and excretion but it can live if it does not reproduce. Reproduction is essential for survival of species and not an individual.

Q8. The ability of an organism to develop into a whole body from a broken piece is known as _____.

a) budding

b) regeneration

c) fusion

d) fission

Ans. (b)

To develop a whole body from a fragment is possible by proliferation (i.e. repeated division and consequent growth) of cells. This is called regeneration. On the contrary, in budding, a complete organism forms a new individual from a bud, and in fission, the cells divide into two. Fusion is said to occur when two cells combine to mix their traits (e.g. in bacteria) and it is uncommon.

Q9. Binary fission differs from multiple fission in respect of

a) the number of individuals formed after fission

b) the number of individuals involved

c) the sexual form of reproduction

d) better survival value to the organisms

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Ans. (a)
Binary fission produces two daughter cells while huge number of cells is produced by multiple fission. Thus, option (1) is correct.

Q10. During vegetative propagation in bryophyllum, buds grow from

a) shoot tip

b) internodes

c) notches of leaf

d) margin of leaf

Ans. (c)
Vegetative propagation in bryophyllum occurs through leaves. Its leaves do not have smooth margins; instead they have notches. The buds grow from these notches only. Since only the leaves play a role in this, the shoot and its parts like shoot tip and internodes (the region between the two nodes) are not involved.

Q11. Spores are produced inside the round blob-like structures known as _____.

a) sporangia

b) capsule

c) cyst

d) bud

Ans. (a)
Spores are the microscopic structures formed during the life cycle of many fungi. Each spore on falling on suitable substratum (medium on which an organism depends for deriving its food) grows into a complete organism, which can later divide and form a complete colony. Spore bearing structures are called sporangia and they are present on stalks called sporangiophores. Capsule refers to dry and indehiscent fruits, which split and seeds fall out. Cysts are hard covered bodies formed under unfavorable conditions in bacteria and they produce daughter cells and not spores. Similarly, buds also do not bear spores as buds are bulging outgrowths of the parent body, which after maturation detaches itself from the

parent body and develops into a new individual. Buds and spores are two different means of asexual reproduction.

Q12. Which of the following cells helps to carry out regeneration?

a) broken cells

b) normal cells

c) specialized cells

d) differentiated cells

Ans. (c)
Regeneration is carried out by specialized cells, which can proliferate at a fast rate. Also, they can form all the different cells that are required to form the body part that the organism needs to regenerate. Broken cells may not proliferate while "all cells" cannot have the above mentioned specialized features. Differentiated cells take up a fixed role and may not be able to produce all the cells required in regeneration.

Q13. Continuity of species is maintained by the process known as _____.

a) nutrition

b) speciation

c) reproduction

d) variation

Ans. (c)

Continuity of species means that generation after generation, the species continue to survive and this is ensured by reproduction. Nutrition can ensure life of an organism but cannot form a new organism. Variation and speciation are related processes of reproduction and refer to the changes that organisms develop during reproduction but they themselves cannot maintain continuity of species without reproduction.

Q14. Which of the following asexual modes of reproduction is used by the higher plants?

a) Spore formation

b) Vegetative propagation

c) Budding

d) Regeneration

Ans. (b)

Higher plants have complex structures and they have specialized parts to perform asexual (vegetative) reproduction, e.g. leaves, stem, roots etc. This formation of new organisms from vegetative parts of a plant is called vegetative propagation. On the contrary, spore formation, budding and regeneration are reproductive methods found in lower organisms or plants.

Q15. The mode of reproduction in Leishmania, the organism which causes kala–azar in humans is called _____.

a) binary fission

b) multiple fission

c) both (A) and (B)

d) none of these

Ans. (a)

Leishmania has a specific organization of body. It has a whip like flagella on one end. Due to this, when its fission occurs, it divides the body such that both get the flagella (duplicated). This is possible in binary fission but not in multiple fission which will require the division to occur in different planes.

Q16. Which of the following statements about regeneration is not true?

a) A broken piece or fragment gives rise to a whole new body.

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b) It involves specialized cells.

c) It is a mode of sexual reproduction.

d) Cells undergo changes to become different cell types and tissues during regeneration.

Ans. (c)

Regeneration refers to formation of the entire organism from a part and for this, the cells of that part need to convert into the form in which they can divide and proliferate. This is a specialized function. Since, only one organism is involved, it is not a sexual mode of reproduction. Hence, only (3) is wrong.

Q17. Spores are released in the air by _____.

a) breaking of the wall of sporangium

b) breaking up of whole of the parent body

c) vigorous shaking of the sporangium

d) breaking of the wall of hyphae

Ans. (a)

Spores are formed inside the sporangia and they are released when the wall breaks. The wall usually breaks on coming in contact with water and seldom on shaking. For release of spores, the lower hyphae or the parent fungus do not break their walls. Thus, (1) is correct.

Q18. The biochemical basis of reproduction is _____.

a) RBC

b) WBC

c) neuron

d) DNA

Ans. (d)

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At the cellular level, reproduction refers to the formation of new cells. It can occur, if a new cell gets nucleus and nucleus contains DNA molecules. DNA is the genetic material, which is passed from one generation to another.
Thus, for reproduction, DNA material is to be duplicated. Hence, DNA is the biochemical basis of reproduction. On the contrary options (1), (2) and (3), which refer to different cells like RBC, WBC and neuron have no role in the process of reproduction.

Q19. Sporangium develops on slender, erect, thread-like structures called

a) constrictions

b) spores

c) buds

d) hyphae

Ans. (d)

The thread-like structures on which sporangia develops are called hyphae. Their scientific name is sporangiophore. Further buds and constrictions are not thread-like, and spores are present inside the sporangium.

Q20. Which of the following processes helps to produce plasmodium?

a) binary fission

b) multiple fission

c) regeneration

d) spore formation

Ans. (b)

Plasmodium grows rapidly inside the human body and for this it divides, by multiple fission because binary fission will produce less number of organisms. Since it is a unicellular organism, then regeneration and spore formation does not occur in Plasmodium.