

Class: 11
Subject: Biology
Topic: ASK15M11HY1
No. of Questions: 30

- Q1. The living organisms can be unexceptionally distinguished from the non-living things on the basis of their ability for
- (a) interaction with the environment and progressive evolution
 - (b) reproduction
 - (c) growth and movement
 - (d) responsiveness to touch

Sol. (b)
There are several factors and processes which differentiate living beings with non-living beings like reproduction, respiration, growth, etc. But among them reproduction is the only difference which differentiate without any exception living beings with non-living things.

- Q2. Which of the following biological processes do not operate within the life span of a given organism?
- (a) Birth and nutrition
 - (b) Growth and maturation
 - (c) Metabolism and excretion
 - (d) Decomposition and mineralization

Sol. (d)

- Q3. Which of the following statements is false?
- (a) properties of cellular organelles are present in the molecular constitutes
 - (b) Interactions among the molecular components of the organelles result into properties of cell organelles.
 - (c) Biology is the story of life on earth
 - (d) Biology is the story of evolution of living organisms on earth.

Sol. (a)

- Q4. Group of organisms that closely resemble each other and freely interbreed in nature, constitute a_
- (a) Species
 - (b) Genus
 - (c) Family
 - (d) Taxon

Sol. (a)

- Q5. Phylogeny refers to-
- (a) Natural classification
 - (b) Evolution classification
 - (c) Evolution history
 - (d) Origin of algae

Sol. (c)

- Q6. In angiosperms, functional megaspore develops into

- (a) embryo sac
- (b) ovule
- (c) endosperm
- (d) pollen sac

Sol. (a)

- Q7. Algae have cell wall made up of:

- (a) cellulose, galactans and mannans
- (b) hemicullose, pectins and proteins
- (c) pectins, cellulose and proteins
- (d) cellulose, hemicelluloses and pectins

Sol. (c)

Q8. Virus envelope is known as

- (a) Capsid
- (b) Virion
- (c) Nucleoprotein
- (d) Core

Sol. (a)

Q9. Which one of the following statements about mycoplasma is wrong?

- (a) They are pleomorphic
- (b) They are sensitive to penicillin
- (c) They cause disease in plants
- (d) They are also called PPLO

Sol. (b)

Q10. In five kingdom system, the main basis of classification is

- (a) structure of nucleus
- (b) mode of nutrition
- (c) structure of cell wall
- (d) asexual reproduction

Sol. (b)

Q11. First life on earth was

- (a) Cyanobacteria
- (b) Chemoheterotrophs
- (c) Autotrophs
- (d) Photoautotrophs

Sol. (b)

Q12. Angiosperms and gymnosperms resemble in having

- (a) Vessels in wood
- (b) Mode of fertilization
- (c) Siphonogamy
- (d) Nature of endosperm

Sol. (c)

Q13. The embryo sac in a angiosperm is a-

- (a) Megasporangium
- (b) Megaspore mother cell
- (c) Megagametophyte
- (d) Megaspore

Sol. (c)

Q14. Which of the following is living fossil?

- (a) Pinus
- (b) Ginkgo biloba
- (c) Thuja
- (d) Deodar

Sol. (b)

Q15. In Gymnosperms, the vascular strand is made up of-

- (a) Conjoint vascular bundle
- (b) Open vascular bundles
- (c) Collateral vascular bundles
- (d) All of the above

Sol. (a)

Q16. Ciliated epithelium in trachea of mammals helps in

- (a) Sucking inspired air in
- (b) Perceiving sense of smell
- (c) pushing expired air out
- (d) pushing mucus out

Sol. (d)

Q17. What mechanism explains the movement of sucrose from source to sink?

- (a) Evaporation of water and active transport of sucrose from the sink
- (b) Osmotic movement of water into the sucrose- loaded sieve-tube cells creating a higher hydrostatic pressure in the source than in the sink
- (c) Tension created by the differences in hydrostatic pressure in the source and sink.
- (d) Active transport of sucrose through the sieve-tube members driven by proton pumps.

Sol. (b)

Q18. According to Munch theory, the cause of flow of soluble substances is

- (a) Protoplasmic flow.
- (b) Mass flow due to reduction in turgor pressure
- (c) Diffusion
- (d) None of these

Sol. (b)

Munch mass flow: This theory is based on difference in osmotic pressure in leaf mesophyll cells and root cells.

Q19. In both transpiration and evaporation, water is lost in the form of vapour yet they differ because

- (a) both transpiration and evaporation are similar, but the rate of water loss differs
- (b) frequency of water loss is different in both of them
- (c) transpiration is a physical process and evaporation is a physiological process
- (d) transpiration is a physiological process and evaporation is a physical process

Sol. (d) Transpiration occurs in plants only from living cells. Evaporation occurs from any free surface, i.e., both from living and non-living surfaces.

- Q20. Water will be absorbed by root hairs when:
- (a) Concentration of salts in the soil is high
 - (b) Concentration of solutes in the cell sap is high
 - (c) The plant is rapidly respiring
 - (d) They are separated from the soil by a semi-permeable membrane

Sol. (b)

- Q21. If the pressure potential is 0.16 megapascals (mPa) and the osmotic potential is -0.24 megapascals, then the water potential would be
- (a) $+0.4$ mPa
 - (b) $+0.08$ mPa
 - (c) -0.08 mPa
 - (d) $+0.16$ mPa

Sol. (c)

The water potential is the sum of the osmotic potential (usually negative) and the pressure potential (usually positive), so $W.P. = -0.24 + 0.16 = -0.08$ mPa.

- Q22. Aquaporins are
- (a) Cytoplasmic connections between cortex cells.
 - (b) Openings in the lower epidermis of leaves through which water vapour escapes.
 - (c) Openings into root hairs through which water enters.
 - (d) Water specific channels in membranes that may regulate the rate of osmosis.

Sol. (d)

- Q23. When synapsis is complete all along the chromosome, the cell is said to have entered a stage called –
- (a) Zygotene
 - (b) Pachytene
 - (c) Diplotene
 - (d) Diakinesis

Sol. (b)

When synapsis is complete all along the chromosome, the cell is said to have entered a stage called pachytene.

- Q24. Slipping of chiasmata towards the ends of bivalent is called
- (a) Terminalisation
 - (b) Diakinesis
 - (c) Interkinesis
 - (d) Heteropycnosis

Sol. (a)

- Q25. If you are provided with root-tips of onion in your class and are asked to count the chromosomes, with of the following stages can you most conveniently look into –
- (a) Telophase
 - (b) Anaphase
 - (c) Prophase
 - (d) Metaphase

Sol. (d)

- Q26. “G₀” state of cells in eukaryotic cell cycle denotes
- (a) Check point before entering the next denotes
 - (b) Pausing in the middle of a cycle to cope with a temporary delay
 - (c) Death of a cell
 - (d) Exit of cells from cell cycle

Sol. (d)

When cells are not to divide after G₂ phase and start undergoing differentiation into specific types of cells such cells are said to be in G₀ phase/G₀ state.

- Q27. There are a number of differences between fission of a bacterium and human cell division. Which of the following is not one of them?
- (a) A bacterium has only one chromosome.
 - (b) Duplicated bacterial chromosomes attach to the plasma membrane.
 - (c) Bacteria are smaller and simpler than human cells.
 - (d) Bacteria have to duplicate their DNA before dividing.

Sol. (d)

Q28. Which of the following is iron porphyrin coenzyme or cofactor?

- (a) Holozyme
- (b) Apoenzyme
- (c) Coenzyme
- (d) All of these

Sol. (a)

Q29. Most enzymes consist of two parts; these are

- (a) Enzyme and coenzyme
- (b) Apoenzyme and enzyme
- (c) Enzyme and substrate
- (d) Apoenzyme and prosthetic group

Sol. (d)

Q30. The “lock and key” model of enzyme action illustrates that a particular enzyme molecule

- (a) May be destroyed and resynthesized several times
- (b) Interacts with a specific type of substrate molecule
- (c) Reacts at identical rates under all conditions
- (d) Forms a permanent enzyme- substrate complex

Sol. (b)