

# Biological Classification

1. **Assertion (A):** Two kingdom classification used for a long time was inadequate.

**Reason (R):** This system did not distinguish between the eukaryotes and prokaryotes, unicellular and multicellular.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

2. **Assertion (A):** In Earlier classifications bacteria, blue green algae, fungi, mosses, ferns, gymnosperms and angiosperms were included together under plants.

**Reason (R):** All the members possess cell wall over plasma membrane.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

3. **Assertion (A):** Classification systems have undergone several changes over a period of time.

**Reason (R):** This happened, because the criteria for classifications get changed gradually.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

4. **Assertion (A):** Bacteria, the sole members of kingdom monera, are the most abundant micro-organisms.

**Reason (R):** Bacteria can tolerate extreme conditions, so they are found everywhere.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

5. **Assertion (A):** Cyanobacteria are photosynthetic autotrophs similar to higher plants.

**Reason (R):** Cyanobacteria have chlorophyll - a and Rubisco.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

6. **Assertion (A):** Heterocyst are specialized cells of blue green algae for Nitrogen fixation.

**Reason (R):** In Heterocyst cells oxygen depleted conditions can be created, which is essential for Nitrogenase functioning.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

7. **Assertion (A):** Heterotrophic bacteria are the most abundant bacteria they have a significant impact on human affairs.

**Reason (R):** Heterotrophic bacteria are helpful in making curd, production of Antibiotics and fixation of nitrogen.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

8. **Assertion (A):** Beside spore formation and binary fission a sort of sexual reproduction is also observed in bacteria, but it is not a typical sexual reproduction.

**Reason (R):** In such type of reproduction there is no gamete formation and fusion.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

9. **Assertion (A):** Members of protista are eukaryotes.

**Reason (R):** Protistial cell body does not contain a well defined nucleus and other membrane bounded cell organelles.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

10. **Assertion (A):** Most of the dinoflagellates show heterokont flagellation.

**Reason (R):** Both of the flagella arise from different levels in them.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

11. **Assertion (A):** Euglenoids show flexible life style.

**Reason (R):** In presence of sunlight they are photosynthetic while in sunlight deprived conditions they behave like heterotrophs.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

12. **Assertion (A):** Slime moulds are extremely resistant and survive for many years.

**Reason (R):** Slime moulds possess branched phospholipids and thermostable enzymes.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

13. **Assertion (A):** Fungi prefer to grow in cold and humid areas.

**Reason (R):** Low temperature favours the metabolic activities.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**14. Assertion (A):** In Ascomycetes and Basidiomycetes well distinct Dikaryophase present during sexual life.

**Reason (R):** During sexual reproduction of Ascomycetes and Basidiomycetes plasmogamy is immediately followed by karyogamy.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**15. Assertion (A):** Viruses are obligate intracellular parasite.

**Reason (R):** Outside the cells virus survive as non living inert crystalline structure.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**16. Assertion (A):** Lichens are symbiotic associations.

**Reason (R):** Lichens are very good pollution indicators.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**17. Assertion (A):** Archaeobacteria are most resistant to adverse environmental conditions

**Reason (R):** In archaeobacteria, cell wall and cell membrane are highly complex.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**18. Assertion (A):** Progressive reduction of sexual reproduction is found in fungi

**Reason (R):** Higher fungi do not produce sex organs and gametes

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**19. Assertion (A):** Dikaryon is observed in Ascomycetes and Basidiomycetes.

**Reason (R):** In some fungi karyogamy is delayed after plasmogamy.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**20. Assertion (A):** Nitrogenase is sensitive to oxygen hence an anaerobic condition is maintained for efficient nitrogen fixation.

**Reason (R):** High energy inputs for the cell to function demands high rates of aerobic respiration in the Krebs's cycle and hence behaves as an oxygen scavenger

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**21. Assertion (A):** Sex organs in fungi are unicellular and nonjacketed.

**Reason (R):** There is no embryo formation in the life cycle of fungi.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false



- 22. Assertion (A):** Amoeba and Paramoecium are included in Kingdom Protista and not in Kingdom Animalia.  
**Reason (R):** Unlike animals, a cell wall is present in these organisms.
- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
  - (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
  - (3) (A) is true but (R) is false
  - (4) Both (A) and (R) are false
- 23. Assertion (A):** The body of Euglenoids is flexible.  
**Reason (R):** The cell wall in Euglenoids is cellulosic.
- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
  - (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
  - (3) (A) is true but (R) is false
  - (4) Both (A) and (R) are false
- 24. Assertion (A):** The artificial systems used for classification of living organisms are not very acceptable to taxonomists.  
**Reason (R):** The artificial systems give more weightage to vegetative characteristics and no weightage to sexual characteristics and the sexual characteristics are easily affected by environment.
- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
  - (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
  - (3) (A) is true but (R) is false
  - (4) Both (A) and (R) are false

- 25. Assertion (A):** Paramoecium and Amoeba, which were earlier placed in the animal kingdom which lack cell wall, are placed under Kingdom Protista in Whittaker's Classification.  
**Reason (R):** The unicellular eukaryotic organisms are placed in Kingdom Protista in Whittaker's Classification.
- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
  - (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
  - (3) (A) is true but (R) is false
  - (4) Both (A) and (R) are false
- 26. Assertion (A):** Lichens are very good pollution indicators.  
**Reason (R):** They grow profusely in polluted areas.
- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
  - (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
  - (3) (A) is true but (R) is false
  - (4) Both (A) and (R) are false
- 27. Assertion (A):** The cyanobacteria that are also referred to as blue green algae are not 'algae' any more.  
**Reason (R):** The cyanobacteria are photosynthetic autotrophs.
- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
  - (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
  - (3) (A) is true but (R) is false
  - (4) Both (A) and (R) are false
- 28. Assertion (A):** Alternaria, Colletotrichum and Trichoderma are kept in the fungal class- Deuteromycetes.  
**Reason (R):** Asexual and vegetative phases in the life cycle of these fungi are not known. In the light of the above statements choose the correct answer from the options given below:
- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
  - (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
  - (3) (A) is true but (R) is false
  - (4) Both (A) and (R) are false



**Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

29. **Assertion:** Two kingdom classification was insufficient.

**Reason:** Majority of organisms failed to fall into either of the categories in two kingdom classification.

30. **Assertion:** Several ruminant animals contain methanogens within their gut.

**Reason:** Methanogens help in the production of methane from dung of ruminants.

31. **Assertion:** Cyanobacteria are photosynthetic autotrophs.

**Reason:** Cyanobacteria have chlorophyll a and b similar to green plants

32. **Assertion:** Cell wall of chrysophytes are indestructible.

**Reason:** Cell walls of chrysophytes have layer of magnesium pectate embedded in it.

33. **Assertion:** Kingdom-Protista forms a link between monerans and the other organism like plants, animal and fungi.

**Reason:** Protist reproduce sexually and asexually by a process involving cell fusion and zygote formation.

34. **Assertion:** Deuteromycetes is known as fungi imperfecti.

**Reason:** In Deuteromycetes, only the asexual phase is known.

35. **Assertion:** Viruses are nucleoproteins and lack cell organelle, etc.

**Reason:** Viruses are not considered organism.

36. **Assertion:** "Contagium Vivum Pasteur Fluidum" was coined by Pasteur.

**Reason:** Pasteur found that virus infected plant of tobacco can cause infection in healthy plant.

37. **Assertion:** Some bacteria have the capacity to retain Gram stain after treatment with acid alcohol.

**Reason:** They are known as gram positive as they are attracted towards positive pole under influence of electric current.

38. **Assertion:** Cell secretion does not occur in bacteria.

**Reason:** Golgi complex is absent in bacteria.

39. **Assertion:** Chemosynthetic autotrophic bacteria oxidise various inorganic substances.

**Reason:** Energy released during oxidation is used in ATP production.

40. **Assertion :** Saccharomyces ellipsoidens is Wine yeast and Saccharomyces cerevisiae is Baker's yeast.

**Reason :** Yeast is used to make dry ice.

41. **Assertion:** Morels and Truffles are edible fungi.

**Reason:** Ascocarps are edible.

42. **Assertion:** Yeast are the best source of vitamin B complex.

**Reason:** Ashbya gossypii is a filamentous yeast.

43. **Assertion:** Virus is an obligate parasite.

**Reason:** Virus is host specific.



### ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	1	1	1	1	1	1	1	1	3	1	1	3	4	3	1	2	1	1	1	3
Que.	21	22	23	24	25	26	27	28												
Ans.	2	2	3	1	1	3	2	3												

29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.		
a	b	c	c	b	a	a	d	c	a	b	b	a	b	b		