

EVOLUTION QUESTIONS

Semester-4, CC-8

SHORT QUESTIONS

Q.1. List the characteristics of fossils.	2
Q.2. How is the age of living tree estimated?	1
Q.3. Name the process to estimate the age of a fossil.	1
Q.4. What is the pre-condition for adaptive radiation?	2
Q.5. How is the age of rock estimated?	1
Q.6. What is the founder effect?	2
Q.7. What is the bottleneck effect?	2
Q.8. What is natural selection?	2
Q.9. What are the factors affecting the Hardy-Weinberg equilibrium?	2
Q.10. What do you mean by “survival of the fittest”?	2
Q.11. Comment on the statement, “Migration may increase or decrease the effects of selection”.	2
Q.12. Explain the terms: Race, Breed, Cultivars, Variety	2
Q.13. How is nascent oxygen toxic to aerobic living organisms?	2
Q.14. Creation and presence of variation are directionless, but natural selection is directional as it is in the context of adaptation. Comment.	1
Q.15. What is genetic drift?	2
Q.16. Explain adaptive radiation. Give examples in support of your answer.	2
Q.17. How is convergent evolution different from divergent evolution?	2
Q.18. State the Hardy-Weinberg principle.	2
Q.19. How does genetic variation help in evolution?	2
Q.20. Enumerate the key concepts in the evolution theory of Darwin.	2
Q.21. Describe the phenomenon in which two organisms occupying the same geographical area show the same strategies of adaptation.	2
Q.22. What is the driving force behind divergent evolution? Explain.	2
Q.23. Which law states that the sum of allelic frequencies in a population is constant? List the five factors that influence the law.	2
Q.24. What are the types of evolution	
Q.25. What structures did early land plants evolve? How did these help them live on land instead of water?	2
Q.26. Knowing that convergent evolution can cause plants to be similar, what do you predict would have a better chance of becoming invasive in the desert: a plant from Arizona, or a plant from Maine?	1
Q.27. Why can't we just split angiosperms into monocots and dicots like people used to do?	1
Q.28. Lycophytes were tall trees during the Carboniferous period. Today, the only lycophytes that exist are small, herbaceous plants. What happened?	1
Q.29. What is the advantage of having flowers?	2
Q.30. Define evolution.	1
Q.31. What is theory of acquired characters?	2
Q.32. What was the objection on Lamarckism?	2
Q.33. What is theory of uniformitarianism?	1
Q.34. What is a fossil?	2
Q.35. How does artificial selection give the idea of natural selection to Darwin?	1
Q.36. What is meant by adaptation?	2
Q.37. What is meant by Adaptedness or fitness?	1
Q.38. Define Migration	1
Q.39. Define Microevolution	1
Q.40. Who suggested that life must have developed from the simple inorganic molecules like methane, hydrogen etc. which were present on the earth soon after it was formed?	2
Q.41. Give the postulations of Darwin.	2

Q.42. What is Speciation?	1
Q.43. Which structures did not evolve after plants emerged onto land?	1
Q.44. How is it believed that plants first became photosynthetic?	2
Q.45. Mutualistic relationships between angiosperms and biotic pollinators foster denotes what types of evolution?	1
Q.46. Which type of plant has seeds that are encased in a protective fruit?	1
Q.47. Which organism did all plants likely evolve from?	1
Q.48. In bryophytes' life cycle, how does a sperm cell get to an egg cell?	1
Q.49. Who proposed phylogenetic classification of plants?	2
Q.50. A cladogram conveys what of an organism?	2
Q.51. Distinguish between Monophyly, Parphyly and Polyphyly.	1
Q.52. Name the 1 st Land Vascular plant.	1
Q.53. Give example of a fossil Bryophyta.	1
Q.54. Name the 1 st Angiosperm.	1
Q.55. What is the basic difference between Bacteria and Archea?	2
Q.56. What do you mean by most recent common ancestor?	2
Q.57. What is phylogeny?	2
Q.58. Why r-RNA is the most useful for evolutionary study of living organisms	2
Q. 59. What is the basic difference between Caynobacteria and Proteobacteria?	2
Q.60. What are <i>Firmicutes</i> ?	1
Q.61. Which is the earliest surviving branch of today's plant?	1
Q.62. Distinguish between <i>Euglenozoans</i> and <i>Alveolates</i> .	2
Q.63. Which is the most primitive Fungal group?	1
Q.64. Which are the most primitive Bryophytes?	1
Q.65. What is the basic reason to designate fungi as a separate Kingdom?	2

SHORT NOTES

Q.1. What do you mean by Phyletic Gradualism?	5
Q.2. What are the steps of origin of species by Natural Selection?	
Q.3. Write a note on group selection.	
Q.4. Define punctuated equilibrium with example.	
Q.5. Write a note on Satsis.	
Q.6. What are the ways through which selection can affect Population variation?	
Q.7. Distinguish between Directional and Disruptive Selaction.	
Q.8. Write a note on Sexual Selection.	
Q.9. Define Speciation. Distinguish between Sympatric and Allopatric Speciations.	
Q.10. Briefly explains Coevolution.	
Q.11. Write a note on Adaptive Radiation.	
Q.12. What is Reproductive Isolation? Distinguish between Pre Mating and Post Mating Mechanism.	
Q.13. Write a note on Endosymbiotic theory.	
Q.14. Schematically gives the Plant Phylogenetic Tree.	
Q.15. Write a note on evolution of Fungi.	
Q.16. "Gymnosperms and Angiosperms originated from a single common ancestor"-Justify	
Q.17. Write a note of Algal origin and Evolution of Bryophytes.	
Q.18. Write notes on the Pteridophyteen Origin of Bryophytes.	
Q.19. "Monocotyledonous Plants are more evolved than Dicotyledonous Plants" – Justify	
Q.20. "Adaption is the pathway of Evolution" -Justify	

LONG QUESTIONS

- Q.1. Discuss the Neutral Theory of Molecular Evolution.
- Q.2. Discuss the parameters of Natural Selection with Examples.
- Q.3. “Phyletic Gradualism and Punctuated Equilibrium are essential for Natural Selection”-Justify
- Q.4. Give a comparative account of Stabilizing, Directional, Disruptive and Sexual Selection.
- Q.5. “Adaptive Radiation and Coevolution are two major phenomena for evolution of different species”- discuss with suitable examples.
- Q.6. Why Reproductive Isolation is essential for the process of speciation? Write a note on Group Selection.
- Q.7. “Adaptive Evolution is the main pathway of Natural Selection”-Justify
- Q.8. Give an account of Phylogeny and Evolution of Bacteria.
- Q.9. Discuss the Origin, Evolution and Phylogeny of Algae.
- Q.10. Give an account of Fungal Phylogeny.
- Q.11. Discuss the probable phylogeny of Bryophytes.
- Q.12. What are the evolutionary sequences of Pteridophytes?
- Q.13. Give an account of Evolution and Phylogeny of Gymnosperms.
- Q.14. Discuss the Origin and Evolution of Angiosperms.
- Q.15. Discuss the probable Plant Phylogenetic tree.