

D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1.

EVOLUTION AND ENVIRONMENTAL BIOTECHNOLOGY

SECTION-A

6 MARKS

1. Define fossils. How are they formed?
2. Write about the significance of fossils. Describe their importance in organic evolution?
3. How can you determine the age of fossils?
4. Write about the different types of fossils?
5. What do you understand by imperfection of geological records?
6. Give an account of Lamarckism. Give various evidences in support and criticism of it?
7. What is modern synthetic theory? Explain it.
8. Write short notes on Germ plasm theory?
9. Define and describe the hypothesis of inheritance of acquired characters?
10. Give an account on Darwinism?
11. Explain the postulates of Neo-Darwinism?
12. Explain the modern concept of evolution?
13. Write short notes on De vries's mutation theory?
14. Write the advantages of mutation theory?
15. Explain the weismann's theory?
16. Write about Darwin-Wallace theory of natural selection?
17. Write about the facts that influenced Darwin's thoughts?
18. What is adaptive radiation? Explain this phenomenon by citing examples of Mesozoic reptiles?
19. Write short notes on macro evolution?

20. Write a short note on trends in evolution?
21. Write in short about the process involved in macro and mega evolution?
22. Give an account of phylogeny of man?
23. Write short note on punctuated equilibria?
24. Write about Simpson's adaptive grid and macro evolution?
25. What is isolation? Describe various pre-mating isolating mechanisms?
26. Write a note on post-mating isolating mechanism?
27. Write about the types of isolation?
28. Write a short note on Mechanical isolation?
29. Write about the evolutionary significance?
30. How does energy flow in an ecosystem?
31. What is food chain? Describe different food chains with examples?
32. What do you mean by ecological efficiency?
33. Write short notes on limnology and thermal stratification of lake?
34. Classify the fresh water environment?
35. Describe lentic ecosystem with suitable examples?
36. Classify the marine environment?
37. Write short notes on sublittoral zone and intertidal sandy shore?
38. What are the factors that affect primary productivity?
39. Describe the carbon cycle in an ecosystem?
40. Define each of the following terms
 - (i) Trophic level
 - (ii) Autotrophs
 - (iii) Decomposers
41. What are the microbial processes in the conversion of nitrogen?
42. Discuss about the phosphorus cycle in nature?

43. Define the following

- (i) Consumption efficiency
- (ii) Net production
- (iii) Assimilation efficiency

44. What is the role of producers, consumers and decomposers in an ecosystem?

45. Write note on nutrient cycling?

46. Explain the input and output processes in an ecosystem?

47. Write note on Y-shaped energy flow model?

48. Write notes on biodiversity?

49. What are the types and patterns of species diversity?

50. Comment on species richness in India?

51. What are the international treaties in the conservation of species diversity?

52. Comment on biodiversity loss and the measures to conserve them.

53. What is the importance of protecting biodiversity?

SECTION-B 15 Marks

1. Write an essay on fossils and fossilisation?
2. Write in detail about the formation of rocks and determination of age of rocks and fossils?
3. Explain about the nature and types of fossils?
4. Write an essay on isolation?
5. Explain the role of isolation in organic evolution?
6. Describe the evolution of horse?
7. Explain in detail about the micro and mega evolution add note on the process involved in mega evolution?
8. Explain detail about the adaptive radiation with examples?

9. Write an essay on the theory of natural selection?
10. Describe those circumstances which helped Darwin in the formation of natural selection?
11. Explain the modern concept of evolution and discuss how does it support Darwinism?
12. Explain the effect of light and temperature on the distribution of plants?
13. Describe the carbon and nitrogen cycle in an ecosystem?
14. Write in detail about the process of photosynthesis?
15. Explain the following with suitable diagram
 - (i) Ecological pyramid
 - (ii) Food web
16. Give a detail account on biogeochemical cycles?
17. Write an essay on the wild life of India?
18. Describe some important wild life sanctuaries and national parks of Indian subcontinent?
