

PACE - IIT & MEDICAL

Level-01

2. (3) Quaternary
3. (3) Earth was formed 4.5 billion years ago.
5. (4) Miller created similar conditions in a laboratory which existed on the earth and in a flask CH₄, H₂, NH₃ and water vapour were enclosed.
9. (3) Homologous structures develop along different directions due to adaptations to different needs. This is divergent evolution.
10. (4) Heart and Brain of vertebrates are homologous structures and thus show divergent or adaptive radiation.
14. (3) Alfred Wallace
15. (1) 3.5 billion
18. (4) Petrification
20. (2) Cromagnon man made cave paintings throughout Europe.
27. (3) Eohippus is Hyracotherium
31. (2) All alleles in apopulation
32. (2) Dinosaurs
33. (3) 4.5 billion years
35. (2) Electric spark
36. (2) RNA can act as a catalyst in origin of life.
39. (4) Adaptive convergence is seen when the characters are not similar.
40. (2) Analogous organs have different anatomical structures.
44. (3) Branching descent and Natural selection
57. (4) Geographical isolation
58. (4) Warbler Finches
59. (3) This is an example of Atavism.
74. (1) Oriental
75. (3) Atavism-For example appearance of tail in humans
79. (4) ESR
82. (1) August Weismann
86. (1) 1100 cc
91. (1) Book written by Lamark
93. (2) Examples of Lung fishes
96. (2) Given by Ernst Heckel
100. (4) Ordovician
102. (2) Jordan's Rule
105. (3) Mechanical Isolation
108. (1) Haldane
109. (2) Example –Appearance of tail in humans
116. (2) Progressive selection/ Directional
119. (3) Neanderthal man
126. (3) *Peripatus* is a connecting link between Annelids and Arthropods.
129. (2) Natural selection
131. (1) Founders effect
132. (2) ESR
136. (2) Trypsin is found in all the organisms.
140. (2) Neanderthal man
142. (2) Allen's Rule
151. (4) Living fossil between Annelids and Molluscs
159. (2) CH₄, NH₃, H₂
160. (3) Palynofossils.

Level-02

3. (3) Mutation
6. (4) Gene flow
7. (2) Variability
8. (1) In which more individuals acquire mean character value
13. (1) More individuals acquire peripheral character value at both ends of the distribution curve.
16. (3) Narrowing of ilium bones of pelvic girdle.
17. (4) Convergent evolution.
20. (2) Anteater- Numbat
21. (3) More individuals acquire value other than the mean character value.
29. (3) Mammals
32. (2) Miocene-*Merychippus*
33. (4) *Ichthyosaurus*
35. (2) 2:2:1 (CH₄:H₂:NH₃)
39. (3) *Pteranodon*
40. (2) Thorn of *Bougainvillea* and tendril of *Cucurbita* are homologous and Archaeopteryx is a fossil bird.
42. (1) Amphibia and Reptilia
47. (2) Genetic drift
51. (2) ESR and DNA of fossils.
54. (1) Ontogeny recapitulates Phylogeny
59. (2) Meshippus
62. (3) Successful individuals contribute more genes in the gene pool.
64. (3) Plihippus of Pliocene period.
74. (2) Melanization of Peppered moth
75. (4) Palaearctic and Oriental

Assertion & Reason

8. (4) A: Darwin finches represent one of the best example of divergent evolution.
R: All of them evolved from original seed eating birds.
9. (3) R: The conditions like high temperature, volcanic storms, reducing atmosphere is not present.
10. (2) R: Different aged rock sediments contain fossils of different life – forms who probably died during the formation of the particular sediment.
13. (2) R: They could live on both land and water.
14. (2) R: Oxygen combined with ammonia and methane to form water, CO₂ and others.
15. (2) R: Louis Pasteur by careful experimentation demonstrated that life comes only from pre-existing life.
16. (2) Oriental biographic realm, includes India, is isolated from Palaearctic realm by Himalayan mountains and from Australian and Ethiopian realms by seas.
20. (2) R: Synthesis of certain substances and breakdown of others occur within these coacervates.
21. (2) R: Variants are not completely wiped out and based on chance events in nature and chance mutations in the organisms resistant organisms appear.
22. (3) These animals called coelacanth were ancestors of modern day frogs and salamanders.

Previous Year

1. (3) Chimpanzee and human DNA is almost identical. Chimpanzee behavior also shows the evolutionary closeness.
3. (4) Analogous structures show convergent evolution.
8. (1)
12. (3) Analogy refers to convergent evolution.
13. (2) Ostracoderm
14. (2) *Latimeria* connecting link between fishes and amphibians. Contains fleshy lobed fins.
18. (1) In the era Mesozoic we have three periods namely Triassic, Jurassic and Cretaceous.
20. (3) Buried their dead and used hides to protect their body.
21. (4) Lamarck's theory of use and disuse.
28. (2) Moths could camouflage themselves to survive.

36. (3) Those who are better fit in an environment, leave more progeny than others.
39. (2) Ernst Haeckel proposed Biogenetic law in support of evolution based on embryological observations.
41. (4) Jurassic was the age of reptiles and cretaceous was their period of decline.
42. (4) Pleistocene is the epoch in the period called Quaternary in which man originated.
44. (1) *Homo erectus* had a large brain around 900 cc.
47. (3) Analogous-perform same function
48. coacervates are protobionts. They can separate combinations of molecules from the surroundings; maintain internal environment. They are called colloidal particles.
60. (1) Homologous structures are limbs but differ in function and thus show divergence.
61. (1) Neopilina shows metamerism, has nephredia and possess shell. Body is divided into Head, foot and Visceral hump.
62. (1) 3.5 billion years.
66. (3) Melanization of peppered moth is a phenomenon which shows natural selection.
76. (3) ESR
82. (4) Greek thinkers thought units of life called spores were transferred to different planets including earth.
83. (2) They are not anatomically similar structures though they perform similar functions.
84. (3) Allele frequencies in a population are stable and is constant from generation to generation.
87. (3) Stabilization is seen in which more individuals acquire mean character value.
92. (4) Analogous structures and convergent evolution.
98. (2) 1400 cc.
100. (1) Homologous organs showing divergent evolution.
101. (2) Theodosius Dozhansky
102. (4) Homologous structures
106. (1) Biogenetic law-Embryogeny repeats evolutionary history.
112. (4) Gene flow, genetic drift, mutation, genetic recombination and natural selection.
125. (1) Same structure but different functions.
129. (3) Larva has notochord and adult lacks notochord.
136. (3) Devonian era