P-304[EVOLUTION & ANIMAL BEHAVIOUR]

1. Answer the following questions. [1 mark]

1. Which one is used for knowing whether or not a population is evolving?
a) Degree of evolution
b) Genetic drift
c) Proportion between acquired variations
d) Hardy Weinberg equation

2. According to De Vries theory, evolution is
a) jerky
b) discontinuous
c) continuous and smooth
d) both a and b

3. Mutation may be described as
a) Continuous genetic variation
b) Phenotypic change
c) Discontinuous genetic variation
d) change due to hybridisation

4. The theory of use and disuse was given by
a) Stebbins
b) Lamarck
c) Aristotle
d) Vavilov

5. The evolution of a species is based upon the sum total of adaptive changes preserved by
a) natural selection
b) isolation
c) speciation
d) human conservation

6. Genetic drift is on account of
a) variations
b) mutation
c) increase in population
d) decrease in population

7. According to Neo- Darwinism, natural selection operates through
a) Fighting between organisms
b) Variations
c) Killing weaker organism
d) Differential reproduction

8. Sympatric speciation develops reproductive isolation without
a) Geographic barrier
b) barrier to mating
c) barrier to gene flow
d) genetic change

9. Quick change in phenotypes in a small band of colonizers is called
a) Founder effect
b) Genetic bottleneck
c) Genetic drift
d) Gene flow

10. Genetic drift is found in
a) Small population with or without mutated genes
b) large population with random mating
c) plant population
d) animal population

11.Which is related to reproduce isolation
a) genetic isolation
b)temporal isolation
c) behavioral isolation
d) all of these.

12. In which condition gene ratio remains constant in a species?
a) gene flow
b) mutation
c) random mating
d) sexual selection

13. Lamarck theory of organic evolution is usually known as
a) Natural selection
b) Inheritance of acquired characters
c) Descent with change
d) continuity of germplasm

14. A species inhabiting different geographical areas is known as
a) sympatric
b) allopatric
c) sibling
d) biospecies

15. Balancing selection is concerned with the successful reproduction of
a) Homozygous recessives

b) homozygous individuals
c) heterozygous individuals
d) all of the above

Answers:

1-d	**2-d**	**3-c**	**4-b**	**5-b**
6-d	**7-d**	**8-a**	**9-a**	**10-a**
11-d	**12-c**	**13-b**	**14-b**	**15-c**

2.Answer the following questions within 2-3 sentences. [1.5 mark]

1. State concept of neutral evolution.
2. What is molecular divergence.
3. State molecular tools for phylogenetic analysis.
4. What is protein sequencing used for ?
5. What is gene pool ?
6. Define gene frequency.
7. State Hardy-Weinberg Law.
8. What is gene flow ?
9. What do you mean by speciation ?
10. What is co-evolution?
11. What is the role of hormone and nervous system in the development of animal behaviour ?
12. Mention neural basis of learning , memory and cognition .
13. What do you understand by development of behaviour ?
14. How does parental care affect reproductive success ?
15. What is circadian rhythm ?
16. Mention types of biological rhythms ?
17. State characteristics of biological rhythms .
18. What do you mean by domestication and behaviour change ?
19. What is habitat selection and optimality in foraging ?
20. Why is communication in animals important ?

3. Answer the following questions within 75-100 words. [2 marks]

1. What is Lamarkism ?
2. State theory of Darwin.
3. What do you mean by molecular clock?
4. What is sequence analysis of proteins and nucleic acids ?
5. What is gene duplication and divergence ?
6. What are assumptions of Hardy-Weinberg Law ?
7. State genetic drift .

8. What is natural selection.
9. Distinguish between macroevolution and megaevolution.
10. What is microevolution.
11. Mention role of hormones in controlling behaviour.
12. State neural method of sleep and arousal.
13. Why is behaviour development important ?
14. What is social communication?
15. What is social dominance ?
16. State uses of space and territoriality .
17. What are mating systems ?
18. State about parental investment and reproduction success.
19. What is migration.
20. What is orientation and navigation ?

4. Answer the following questions within 500 words. [6marks]

1. What are the theories of evolution ?
2. Give the evidences of evolution.
3. What is the concept of neutral evolution ?
4. Explain about molecular divergence and molecular clocks .
5. What are molecular tools in phylogeny ?
6. Write short note on classification and identification of molecular evolution .
7. Give an account on protein and nucleotide sequence analysis.
8. State about origin of new gene and protein.
9. What do you mean by gene duplication and divergence.
10. Write short note on variation and selection as underlying mechanisms of evolution.
11. What are evolutionary trends ?
12. Give an account on co-evolution.
13. Give a brief account on classification and analysis of behavioural patterns .
14. What are tools and techniques in behavioural study ?
15. State about neural and behavioural control of behaviour .
16. What is the neural basis of learning , memory , cognition , sleep and arousal ?
17. State about the development of behaviour. Add a note on aggressive behaviour.
18. Give an account on parental investment and reproductive success.
19. What are the types and characteristics of biological rhythms ?
20. Explain about circadian rhythms .
21. Write short note on domestication and behavioural changes.
22. What is habitat selection and optimality in foraging ?