

5. ORIGIN AND EVOLUTION OF LIFE

MULTIPLE CHOICE QUESTIONS (1 MARK EACH)

- 1 _____ is considered as connecting link between ape and man.
A Australopithecus
B *Homo habilis*
C *Homo erectus*
D Neanderthal man
- 2 Humans are most closely related to _____.
A Marsupial
B Lemur
C Chimpanzees
D Tarsier
- 3 The proportion of an allele in the gene pool to the total number of alleles at a given locus is called _____.
A gene pool
B gene frequency
C gene flow
D genetic drift
- 4 Transfer of a part of chromosome or set of genes to a non-homologous chromosome is called _____.
A deletion
B duplication
C inversion
D translocation
- 5 Any random fluctuation in allele frequency, occurring in the natural population by pure chance is called _____.
A gene pool
B gene mutation
C genetic recombination
D genetic drift
- 6 One major criticism against Darwin's theory is that it does not
A. Does not explain survival of fittest
B. The better adapted individuals are selected by nature
C. It is unable to explain the 'arrival of fittest'
D. Reproductive capacity of organism
- 7 The correct binomial expansion of $(p+q)^2$ for Hardy-Weinberg's principle is
A. $2p+pq+q^2$
B. $p^2+2pq+q$
C. $p^2+2pq+q^2$
D. p^2+pq+q^2
- 8 Homologous organs have
A. Dissimilar ancestry and dissimilar structure
B. Similar ancestry but similar or dissimilar functions
C. Dissimilar ancestry and dissimilar function
D. Dissimilar ancestry and similar functions
- 9 In which epoch rise of monocots was seen?
A. Miocene
B. Oligocene
C. Eocene
D. Palaeocene

- 10 Which of the following is not the vestigial organ?
A. Third eye
B. Coccyx
C. Wisdom teeth
D. Brain
11. Wings of bird and wings of butterfly are-
A. Vestigial organ
B. Analogous organs
C. homologous organs
D. similar structures
- 12 The plant used by Lamarck to explain his postulates was
A. Morning prime rose
B. Pea plant
C. Evening prime rose
D. *Drosophila*

VERY SHORT ANSWER QUESTIONS (1MARK EACH)

- 1 What is abiogenesis?
- 2 Which theory explains the continuity of life but not the origin of life?
- 3 Why 'hot dilute soup' did not show any degradation?
- 4 What are protobionts?
- 5 What was the proportion of methane, ammonia and hydrogen in Urey and Miller's experiment?
- 6 What is the major evidence in support of RNA world hypothesis?
- 7 Define natural selection.
- 8 Define mutation.
- 9 What is speciation?
- 10 Which epoch represents 'age of mammals'?
- 11 Define the term 'Mendelian population'.
- 12 Define Gene pool.
- 13 Name the ancestor of human also known as man with ape brain.
- 14 Name the ancestor of human nicknamed as Handy man
- 15 Whose fossils were discovered at the site of Shivalik hills, India?

SHORT ANSWER TYPE QUESTIONS (SA-I) (2MARKS EACH)

- 1 Write a note on coacervates?
- 2 Draw a labelled diagram of Urey-Miller's experiment.
- 3 Mention any four points that support RNA world hypothesis.
- 4 Give various evidences in support of Darwinism.
- 5 Enlist various objections to Darwin's theory.
- 6 What are the main features of mutation theory?
- 7 Write a note on genetic drift.
- 8 Explain directional selection with the help of labelled diagram.
- 9 Explain any two types of fossils and mention two points of significance of palaeontology.
- 10 Differentiate between analogous and homologous organs.
- 11 Explain various molecular evidences in support of organic evolution.
- 12 Differentiate between allopatric and sympatric species.
- 13 Mention any two developments in human which helped him to move around safely on land.

- 14 Distinguish New world and old-world monkeys based on their tail along with their examples.
- 15 What is hybrid sterility?
- 16 What led to better utilization of hands for holding objects effectively and better motor skills?
- 17 Describe modern man.
- 18 Distinguish between Australopithecus and Neanderthal man
- 19 Distinguish between *Homo erectus* and Neanderthal man

SHORT ANSWER TYPE QUESTIONS (SA-II) (3MARKS EACH)

- 1 Explain various postulates of Darwinism.
- 2 Give an account of Hardy-Weinberg's principle with suitable example.
- 3 Explain archaeopteryx as a connecting link between reptiles and aves.
- 4 Give an account of rudimentary organs with suitable examples.
- 5 Name any three types of premating isolating mechanisms.
- 6 Name any three types of postmating isolating mechanisms.
- 7 Explain Geographical Isolation
- 8 Write down the three main concepts of modern synthetic theory.
- 9 What is chromosomal aberration? Give any two types of aberrations found in the population.
- 10 Complete the table based on the special features of Human ancestors showing their cultural and social development.

Ancestors	Special features
<i>Homo erectus</i>	
	Buried their dead
	Made tools from stones

- 11 Write a note on *Homo habilis*

LONG ANSWER TYPE QUESTIONS (LA) (4 MARKS EACH)

- 1 Explain any two types of natural selection.
- 2 Explain various palaeontological evidence in support of organic evolution.
- 3 How homology and analogy of organs support evolution, explain.
- 4 What is genetic variation? Explain any three factors responsible for genetic variation.
- 5 Explain the concept of Natural Selection with the example of Industrial Melanism.