

**2023**

***Time - 3 hours***

***Full Marks - 60***

*Answer all groups as per instructions.*

*Figures in the right hand margin indicate marks.*

*Candidates are required to answer  
in their own words as far as practicable.*

*Draw labelled diagrams wherever necessary.*

**GROUP – A**

1. Answer all questions and fill in blanks as required. [1 × 8]
- (a) Discovery of which enzyme revive the hypothesis of RNA-world ?
  - (b) Seymouria is a missing link between \_\_\_\_\_ and \_\_\_\_\_.
  - (c) Chemoheterotrophs are presumed as the first living organism. (True/False).
  - (d) Who proposed that genetic drift is one of the causes of evolution ?
  - (e) Allopatric speciation is also known as geographical speciation (True/False.)

P.T.O.

[ 2 ]

- (f) In \_\_\_\_\_ mimicry, two or more unpalatable species resemble to each other.
- (g) The half life of Carbon is \_\_\_\_\_ years.
- (h) In \_\_\_\_\_ period, first fossil is of man was found.
- (i) The fixation of molecular mutation does not occur on their adaptive value is one of the postulate of molecular clock. (True/ False).

**GROUP – B**

2. Answer any eight of the following questions within two to three sentences each. [1½ × 8

- (a) Why are coacervate not considered as the model for proto-cell ?
- (b) Define germ plasma theory and who proposed it ?
- (c) What is convergent evolution ?
- (d) Name four vestigial organ found in man.
- (e) Define gene pool ?
- (f) What is heterozygous superiority ? Give one example.
- (g) What is selection coefficient.
- (h) Give three examples of post-mating isolation mechanism.

[ 3 ]

- (i) Distinguish between clines and race.
- (j) Write three unique hominin characters.

**GROUP – C**

3. Answer any eight of the following questions within 75 words each.

[2 × 8

- (a) Write the three experiments that disprove the theory of abiogenesis.
- (b) Justify why Archaeopteryx is the missing link between reptiles and birds ?
- (c) What is founder effect ?
- (d) What is balanced polymorphism ? Give one example.
- (e) Write about allopatric speciation.
- (f) In a, HWE population, one gene has two allele  $m_1$  and  $m_2$  , if the frequency of  $m_1$  allele is 0.4, then calculate the frequency of heterozygote genotype ?
- (g) What is r-adaptation ?
- (h) What is petrification ?
- (i) Write some characters of Neanderthal man.
- (j) What was the characteristic of primitive atmosphere ?

P.T.O.

**GROUP – D**

4. Answer any four of the following questions within 500 words each.
- (a) Describe the Darwinism and how is it different from Lamarckism ? [6]
  - (b) What is a fossil ? Describe different type of fossil and their mechanism of formulation. [6]
  - (c) Describe the evolutionary forces that upset H-W equilibrium. [6]
  - (d) Differentiate between genetic drift and natural selection. [6]
  - (e) What is adaptive radiation ? Describe with an example. [6]
  - (f) Describe some pre-mating isolation mechanism with examples. [6]
  - (g) Write an essay on evolution of man. [6]