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# NEET EVOLUTION — MECHANISM OF EVOLUTION, HARDY–WEINBERG PRINCIPLE, GENETIC DRIFT — PYQS

**Max. Marks:** 108 **Questions:** 27

## Section A (MCQ) — 27 questions

**Q.1** A population of diploid organisms is at Hardy-Weinberg equilibrium. If the frequency of allele A is 0.1, the frequency of AA is _____. [RE-NEET (UG) 2026]

(1) 0.99 (2) 0.01 (3) 0.02 (4) 0.10

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**Q.2** Natural selection can lead to _____.

A. stabilisation B. genetic drift
C. directional change D. disruption

[RE-NEET (UG) 2026]

(1) A and C only (2) A only
(3) A, C and D only (4) A, B, C and D

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**Q.3** Which one of the following factors will not affect the Hardy-Weinberg equilibrium? [NEET (UG) 2024]

(1) Genetic recombination
(2) Genetic drift
(3) Gene migration
(4) Constant gene pool

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**Q.4** Match **List-I** with **List-II** :

| List - I | | List - II | |
|---|---|---|---|
| A. | Gene pool | I. | Stable within a generation |
| B. | Genetic drift | II. | Change in gene frequency by chance |
| C. | Gene flow | III. | Transfer of genes into or out of population |
| D. | Gene frequency | IV. | Total number of genes and their alleles |

Choose the correct answer from the options given below : [RE-NEET (UG) 2024]

(1) A-III, B-II, C-I, D-IV
(2) A-IV, B-II, C-III, D-I
(3) A-I, B-II, C-III, D-IV
(4) A-II, B-III, C-IV, D-I

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**Q.5** Natural selection where more individuals acquire specific character value other than the mean character value, leads to [NEET (UG) 2022]

(1) Stabilising change (2) Directional change
(3) Disruptive change (4) Random change

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**Q.6** The factor that leads to Founder effect in a population is : [NEET (UG) 2021]

(1) Genetic drift
(2) Natural selection
(3) Genetic recombination
(4) Mutation

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**Q.7** A gene locus has two alleles A, a. If the frequency of dominant allele A is 0.4, then what will be the frequency of homozygous dominant, heterozygous and homozygous recessive individuals in the population? [NEET (UG) 2019]

(1) 0.16 (AA); 0.48 (Aa); 0.36 (aa)
(2) 0.16 (AA); 0.36 (Aa); 0.48 (aa)
(3) 0.36 (AA); 0.48 (Aa); 0.16 (aa)
(4) 0.16 (AA); 0.24 (Aa); 0.36 (aa)

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**Q.8** In a species, the weight of newborn ranges from 2 to 5 kg. 97% of the newborn with an average weight between 3 to 3.3 kg survive whereas 99% of the infants born with weights from 2 to 2.5 kg or 4.5 to 5 kg die. Which type of selection process is taking place? [NEET (UG) 2019]

(1) Disruptive Selection
(2) Cyclical Selection
(3) Directional Selection
(4) Stabilizing Selection

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**Q.9** Artificial selection to obtain cows yielding higher milk output represents : [NEET 2017]
(1) directional as it pushes the mean of the character in one direction
(2) stabilizing followed by disruptive as it stabilizes the population to produce higher yielding cows.
(3) disruptive as it splits the population into two, one yielding higher output and the other lower output.
(4) stabilizing selection as it stabilizes this character in the population.

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**Q.10** Genetic drift operates in [NEET 2016 (Phase 2)]
(1) slow reproductive population
(2) large isolated population
(3) non-reproductive population
(4) small isolated population

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**Q.11** In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by [NEET 2016 (Phase 2)]
(1) pq (2) $p^2$ (3) 2pq (4) $q^2$

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**Q.12** The tendency of population to remain in genetic equilibrium may be disturbed by : [NEET 2013]
(1) lack of random mating
(2) random mating
(3) lack of migration
(4) lack of mutations

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**Q.13** Variation in gene frequencies within populations can occur by chance rather than by natural selection. This is referred to as : [NEET 2013]
(1) Genetic drift (2) Genetic load
(3) Genetic flow (4) Random mating

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**Q.14** Random unidirectional change in allele frequencies that occurs by chance in all populations and especially in small populations is known as :- [NEET 2013 (Karnataka)]
(1) Genetic drift (2) Migration
(3) Mutation (4) Natural selection

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**Q.15** Genetic variation in a population arises due to : [NEET 2013 (Karnataka)]
(1) Reproductive isolation and selection
(2) Mutations only
(3) Mutations as well as recombination
(4) Recombination only

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**Q.16** If the mean and the median pertaining to a certain character of a population are of the same value, the following is most likely to occur:- [AIPMT 2007]
(1) A normal distribution
(2) A T-shaped curve
(3) A skewed curve
(4) A bi-modal distribution

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**Q.17** Using imprints from a plate with complete medium and carrying bacterial colonies, you can select streptomycin resistant mutants and prove that such mutations do not originate as adaptation. These imprints need to be used - [AIPMT 2005]
(1) On plates with minimal medium
(2) Only on plates with streptomycin
(3) Only on plates without streptomycin
(4) On plates with and without streptomycin

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**Q.18** At a particular locus, frequency of 'A' allele is 0.6 and that of 'a' is 0.4. What would be the frequency of heterozygotes in a random mating population at equilibrium? [AIPMT 2005]
(1) 0.48 (2) 0.24 (3) 0.36 (4) 0.16

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**Q.19** Which of the following is not true for a species ? [AIPMT 2005]

(1) Variations occur among members of a species
(2) Gene flow does not occur between the populations of a species
(3) Each species is reproductively isolated from every other species
(4) Members of a species can interbreed

Scan or tap for the full solution

**Q.20** Random genetic drift in a population probably results from [AIPMT 2003]
(1) Constant low mutation rate
(2) Interbreeding within this population
(3) Large population size
(4) Highly genetically variable individuals

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**Q.21** In a random mating population in equilibrium, which of the following brings about a change in gene frequency in a non-directional manner :- [AIPMT 2003]
(1) Selection (2) Random drift
(3) Mutations (4) Migration

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**Q.22** Which of the following is important for speciation ? [AIPMT 2002]
(1) Behavioural isolation
(2) Seasonal isolation
(3) Tropical isolation
(4) Reproductive isolation

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**Q.23** Genetic drift operates in : - [AIPMT 2002]
(1) Slow reproductive population
(2) Small isolated population
(3) Large isolated population
(4) Fast reproductive population

Scan or tap for the full solution

**Q.24** In which condition, the gene ratio remains constant for any species population ? [AIPMT 2002]
(1) Gene flow (2) Mutation
(3) Sexual selection (4) Random mating

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**Q.25** Reason of diversity in living beings : - [AIPMT 2001]
(1) Mutation
(2) Short term evolutionary change
(3) Long term evolutionary change
(4) Gradual change

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**Q.26** Forthcoming generations are less adaptive than their parental generation due to [AIPMT 2001]
(1) Genetic drift (2) Natural selection
(3) Mutation (4) Adaptation

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**Q.27** In Lederberg's replica plating experiment, what shall be used to obtain a streptomycin-resistant strain? [AIPMT 2001]
(1) Only minimal medium
(2) Complete medium and streptomycin
(3) Only complete medium
(4) Minimal medium and streptomycin

Scan or tap for the full solution

## ANSWER KEY

| Ques. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ans. | 2 | 3 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 4 | 3 |
| Ques. | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Ans. | 1 | 1 | 1 | 3 | 1 | 2 | 1 | 2 | 2 | 2 | 4 |
| Ques. | 23 | 24 | 25 | 26 | 27 | | | | | | |
| Ans. | 2 | 4 | 3 | 3 | 4 | | | | | | |