

Global Perspectives in Genetics

Genetics · Answer Key · 15 Questions

1. Which specific haplogroup is considered the most common paternal lineage among indigenous populations of the Americas?

- A) Haplogroup Q**
- B) Haplogroup R1b
- C) Haplogroup J2
- D) Haplogroup E1b1b

2. The 'Out of Africa' theory of human migration is supported by the highest level of genetic diversity being found in populations from which region?

- A) East Asia
- B) Sub-Saharan Africa**
- C) Northern Europe
- D) The Andean Highlands

3. Genetic studies of the Malagasy people of Madagascar reveal a unique admixture between which two distinct geographical populations?

- A) Australian Aboriginal and Polynesian
- B) Austronesian and Bantu**
- C) Scandinavian and Inuit
- D) Han Chinese and Berber

4. The CCR5-delta 32 mutation, which provides resistance to HIV, reaches its highest frequency in populations from which geographical area?

- A) Central Africa
- B) Northern Europe**
- C) Southeast Asia
- D) The Amazon Basin

5. Genetic evidence confirms that the ancestors of modern Polynesians originated from which specific region via the 'Lapita' migration?

- A) South America
- B) Taiwan**
- C) Madagascar
- D) The Arabian Peninsula

6. Which population group is known for the highest prevalence of the lactase persistence allele, a trait that evolved in response to a dairy-based diet?

A) Indigenous Australians

B) Northern Europeans

C) Amazonian tribes

D) Papuan Highlanders

7. The genetic profile of the modern Icelandic population shows a significant admixture of which two ancestral groups?

A) Celtic and Norse

B) Slavic and Turkic

C) Sami and Basque

D) Han and Mongol

8. Studies of the 'Bajau' people, known as the 'Sea Nomads' of Southeast Asia, show genetic adaptations related to which physiological trait?

A) High-altitude oxygen efficiency

B) Increased spleen size for diving

C) Digestive enzyme optimization for raw fish

D) UV radiation resistance

9. The 'Sickle Cell Trait' (HbS) exhibits a high geographical correlation with historical patterns of which disease?

A) Bubonic Plague

B) Malaria

C) Tuberculosis

D) Smallpox

10. Ancient DNA analysis of the 'Kennewick Man' skeleton suggests the closest modern genetic affinity to which indigenous population?

A) Inuit

B) Colville people of Washington State

C) Ainu of Japan

D) Navajo

11. The high frequency of the 'Thrifty Gene' hypothesis is most commonly studied in the context of the genetic susceptibility to Type 2 diabetes in which Pacific island nation?

A) Nauru

B) Fiji

C) Vanuatu

D) Samoa

12. Genetic analysis of the Basque people of Spain and France reveals that they have the highest frequency of which blood type in Europe?

- A) A+
- B) O-**
- C) B-
- D) AB+

13. The 'Denisovan' hominin genome was first sequenced from a fossil found in which geographical region?

- A) Altai Mountains of Siberia**
- B) Rift Valley of Kenya
- C) Java, Indonesia
- D) Patagonia, Argentina

14. Which group of people maintains a high frequency of the 'J2' haplogroup, tracing their ancestry to the ancient Mesopotamia region?

- A) The Saami
- B) The Kurds**
- C) The Quechua
- D) The Maori

15. Genetic studies on the Sherpa people of the Himalayas have identified the EPAS1 gene, which is associated with adaptation to which condition?

- A) Extreme cold
- B) High-altitude hypoxia**
- C) High UV exposure
- D) Low-iodine diet