Geology and Human Health

Geology · Answer Key · 18 Questions

1. Which mineral, commonly used in industrial insulation, is a known cause of mesothelioma and lung cancer when inhaled?

A) Quartz
B) Asbestos
C) Feldspar
D) Calcite

2. Prolonged ingestion of water containing high levels of naturally occurring fluoride can lead to which health condition?

A) Skeletal fluorosis
B) Anemia
C) Rickets
D) Hypercalcemia

3. Which heavy metal, frequently found in mineral deposits and released by mining, can cause neurological damage and kidney failure in humans?

A) Iron
B) Mercury
C) Calcium
D) Magnesium

4. What is the primary human health risk associated with exposure to radon gas, a byproduct of uranium decay found in certain rocks?

A) Skin rashes
B) Lung cancer
C) Digestive disorders
D) Vision loss

5. Deficiency in which mineral, often sourced from soil and geological substrates, can lead to the enlargement of the thyroid gland known as a goiter?

A) Iodine
B) Zinc
C) Copper
D) Nickel

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6. Which mineral, known as galena, is the primary ore for lead, a substance historically linked to cognitive impairment in children?

A) Lead sulfide
B) Iron oxide
C) Aluminum silicate
D) Sodium chloride

7. Which naturally occurring arsenic compound found in groundwater in geological formations is highly toxic and linked to skin lesions and cancer?

A) Arsenic trioxide
B) Calcium carbonate
C) Silica gel
D) Manganese oxide

8. Excessive inhalation of fine silica dust, often generated during stone cutting or mining, leads to which chronic respiratory disease?

A) Silicosis
B) Asthma
C) Bronchitis
D) Pneumonia

9. The concentration of which element in soil is essential for human health to prevent anemia and oxygen transport issues in blood?

A) Iron
B) Sulfur
C) Beryllium
D) Cadmium

10. What toxic element can be released into the environment from the weathering of rocks containing cadmium, leading to bone fragility and kidney damage?

A) Cadmium
B) Potassium
C) Sodium
D) Magnesium

11. Which mineral component of bone, hydroxylapatite, is chemically similar to the mineral found in phosphate rock deposits?

A) Calcium phosphate
B) Sodium chloride
C) Iron sulfide
D) Quartz

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12. High levels of selenium in the diet, often determined by the local soil geology, can cause a condition known as selenosis, which primarily affects:

A) Hair and nails
B) Heart valves
C) Liver function
D) Lung capacity

13. Which geological substance, when ingested in small amounts as a medicine, is used to treat skin conditions like diaper rash?

A) Talc
B) Mica
C) Graphite
D) Pyrite

14. The presence of copper in drinking water, often leached from geological deposits or piping, can lead to which of the following if consumed in excess?

A) Gastrointestinal distress
B) Memory loss
C) Hair growth
D) Bone density gain

15. Which radioactive element, common in the Earth's crust, is a major source of ionizing radiation in the human environment?

A) Uranium
B) Gold
C) Silver
D) Copper

16. Exposure to manganese dust, often occurring in manganese mining regions, is associated with which neurological condition resembling Parkinson's disease?

A) Manganism
B) Dementia
C) Epilepsy
D) Narcolepsy

17. Which mineral is essential for the function of human enzymes and is primarily obtained through the ingestion of plants grown in mineral-rich soil?

A) Zinc
B) Lead
C) Mercury
D) Arsenic

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18. Chronic ingestion of water with high levels of barium, which can originate from barite deposits, is linked to which health issue?

A) Increased blood pressure

B) Vision impairment

C) Skin depigmentation

D) Muscle weakness

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