

## NOVA Video Questions: *Hunting the Elements*

Geology

Mr. Traeger

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

Answer the questions that follow to the best of your ability. The questions are in chronological order.

- 1) Where does an element take its identity from? (5:30)
  
- 2) How much gold (Au) is extracted per ton of rock ore? (8:30)
  
- 3) How much does a gold (Au) bar weigh and how much is it worth? (13:00)
  
- 4) Why is copper (Cu) so widely sought on the world market and New York Mercantile Exchange? (16:00)
  
- 5) What is copper (Cu) combined with to make bronze? (18:00)
  
- 6) What makes metals like Copper (Cu) conductive to electricity? (20:00)
  
- 7) Bronze is an alloy. What is an alloy and why are they preferable at times? (22:00)
  
- 8) How does the atomic arrangement of atoms lead to its crystal structure like was seen in the sample of bronze with gold (Au) and tin (Sn) atoms? (32:00)
  
- 9) What is the atomic number and what does the atomic number indicate? (34:00)
  
- 10) Most of the periodic table is made of what type of elements? (35:00)
  
- 11) How did early chemists like Mendeleev classify the elements? (38:00)
  
- 12) How is the periodic table structured with regard to elements with similar properties? (40:00)
  
- 13) What makes noble gases stable? (43:00)

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- 14) Why is an alkali metal element like Sodium (Na) so reactive? (45:00)
  
- 15) What does chlorine ( $\text{Cl}^-$ ) do for sodium ( $\text{Na}^+$ )? What tasty substance is produced when this happens? (48:00)
  
- 16) What powers explosions and fire? (55:00)
  
- 17) What elements are basic to all living things? (59:00)
  
- 18) Why is Carbon (C) so good for forming the structure of life? (1:06:00).
  
- 19) What are at least three (3) other elements that are used for life functions and what are their uses? (1:12:00)
  
- 20) Why are cyanobacteria from places like volcanic pools so important for the production of oxygen in our atmosphere? (1:17:00)
  
- 21) What was the original element formed moments after the Big Bang? What then created higher order elements? (1:19:00)
  
- 22) How does silicon shape our technological reality? (1:22:00)
  
- 23) How are rare earth elements like neodymium (Nd) important to our technological world? (1:27:00)
  
- 24) What is an isotope like Carbon-14? (1:42:00)
  
- 25) How can an isotope like Carbon-14 be used to date dead organisms? (1:44:00).
  
- 26) What is an unstable radioactive isotope? (1:46:00)
  
- 27) Why don't the man-made radioactive elements exist for very long? (1:58:00)