

Math:

1. How much is 10^6 ?

- A. One trillion B. One billion C. One million D. One thousand E. 106

2. What is the root of the natural logarithm?

- A. 10 B. ~ 3.14159 C. ~ 2.718 D. 1.00 E. -1.00

3. What is the value of 1000^0 ?

- A. 1,000,000 B. 10000 C. 1.0 D. 0 E. -1.00

4. What is the cosine of 90° ?

- A. 1,000,000 B. 10000 C. 1.0 D. 0 E. -1.00

5. What is the value of 90° in radians?

- A. 0.25 B. $2\pi = \sim 6.2382$ C. $\pi = \sim 3.14159$ D. $\pi/2 = \sim 1.5708$ E. 0.0

Chemistry:

6. What is the element Sn?

- A. Silicon B. Silver C. Strontium D. Tin E. Tungsten

7. Write the chemical symbol for the element iron.

- A. Ir B. Fr C. Fe D. F E. I

8. What is ^2H ?

- A. An atom with 1 proton and 1 neutron
B. A molecule composed of 2 atoms of H
C. An ion of H with a charge of +2
D. Helium
E. Two moles of hydrogen

9. What is H_2 ?

- A. An atom with 1 proton and 1 neutron
B. A molecule composed of 2 atoms of H
C. An ion of hydrogen with a charge of +2
D. Helium
E. Two moles of hydrogen

10. One mole of SiO_2 weighs 60.086g. One mole of MgO weighs 40.312g. What is the weight of one mole of forsterite (Mg_2SiO_4)?

- A. 160.48g B. 100.398g C. 140.71g D. About a pound E. About three tons

Mineralogy:

11. The mineral quartz is SiO_2 . Is all SiO_2 quartz?

- A. Yes
B. No

12. Which of the following ions are cations? Which are anions? (A or C?)

Fe^{2+} _____
 O^{2-} _____
 Si^{4+} _____
 Cl^- _____
 Al^{3+} _____
 F^- _____

13. A mineral is a natural crystalline phase. Is water ice a mineral?

- A. Yes
B. No

14. The major mineral in sandstone is:

- A. quartz B. calcite C. clay D. coesite E. feldspar

15. The major mineral in limestone is:

- A. quartz B. calcite C. clay D. coesite E. feldspar