Practice Exam

Geology and Art

Fall, 2004

Multiple Choice Section

There may be one, several, or no correct answers for each question. Circle the letter(s) that are correct.

1. Scientists believe the Earth was created
    (a) 5 million years ago
    (b) 4004 years BC
    (c) between 15 and 20 billion years ago
    (d) 4.6 billion years ago
2. Mechanisms of heat transfer within the earth include
    (a) convection
    (b) conduction
    (c) inversion
    (d) isothermal
3. Which of the following is always true concerning a mineral
    (a) heterotrophic
    (b) inorganic material
    (c) contains oxygen in its chemical formula
    (d) ordered atomic structure
4. Which compounds tend to have the highest melting point
    (a) compounds with ionic bonds
    (b) compounds with covalent bonds
    (c) compounds with Van der Waal bonds
    (d) compounds with metallic bonds
5. The crystallo-chemical classification is based on
    (a) chemical composition
    (b) energy dispersal patterns
    (c) crystal healing powers
    (d) crystal structure
6. Which mineral has the highest concentration of silicon?
    (a) hematite
    (b) plagioclase feldspar
    (c) olivine
    (d) pyroxene
7. Intrusive igneous rocks tend to have
    (a) phaneritic textures
    (b) aphanitic textures
    (c) vessicles
    (d) graded bedding
8. Bowen's Reaction Series graphically demonstrates
    (a) What minerals readily dissolve in water
    (b) The order in which minerals crystallize in a magma
    (c) How feldspar weathers in an alpine environment
    (d) Which clay minerals are created by the weathering of basalt
9. Which of the following are concordant intrusions
    (a) sills
    (b) dikes

(c) batholiths
(d) lopoliths

10. A talus slope is primarily a product of
    (a) chemical weathering
    (b) flooding
    (c) chemoautotrophs
    (d) physical weathering
11. The following is a $2KAlSi_3O_8 + 2H^+ + 9H_2O$ ----> $Al_2Si_2O_25(OH)_4 + 4H_4SiO_4 + 2K^+$
    (a) oxidation reaction
    (b) dissolution reaction
    (c) hydrolysis reaction
    (d) Bowen's reaction
12. Chemical weathering rates are dependent on
    (a) mineral composition
    (b) climate
    (c) vegetation
    (d) rock integrity
13. The following metamorphic rock is generally not foliated
    (a) phyllite
    (b) mica schist
    (c) gneiss
    (d) slate
14. Geologists refer to the yield point as
    (a) a triangular yellow sign
    (b) the limit of elastic deformation
    (c) all deformation beyond this point is ductile
    (d) the core-mantle boundary
15. Rocks tend to deform in a brittle manner
    (a) where rocks are relatively cool
    (d) deep in the crust
    (c) where confining pressure is high
    (d) where there is no differential stress
16. Which are characteristic of normal faults?
    (a) head wall moves up relative to the foot wall
    (b) head wall moves down relative to the foot wall
    (c) extensional deformation
    (d) compressive deformation
17. Which of the following can you stand on?
    (a) an epicenter
    (b) the focus of an earthquake
    (c) the asthenosphere
    (d) fault

Short Answer Section

18. Explain the difference between absolute time and relative time.
19. Name a specific type of unconformity and describe how it might form.
20. Differentiation of magma may occur by partial melt and fractional crystallization. Describe one of these two processes.
21. What is a migmatite?
22. List the factors that contribute to the viscosity of a magma?
23. Describe the difference between uniform and differential stress.