

Geology 104 midterm 2 October 9, 2015  
Fifty (50) minute time limit.  
Write your answer to the left of each question

NAME:

Evan Soto

1  
Foliation tends to develop in a direction:

- AB
- (a) perpendicular to the direction of applied stress
  - (b) aligned with the direction of applied stress
  - (c) parallel to sedimentary bedding planes

2  
Strike slip motion along a plate boundary may be caused by:

- B
- (a) great quantities of magma pushing on the overlying sediments
  - (b) subduction of one plate beneath another at an oblique angle
  - (c) normal faulting in areas of high tectonic compressional forces

3  
A fractured rock is likely to have undergone:

- C
- (a) elastic deformation
  - (b) ductile deformation
  - (c) brittle deformation

4  
As a rubidium atom radioactively decays into a strontium atom:

- BO
- (a) the rubidium nucleus loses both a proton and a neutron
  - (b) a high energy electron is emitted
  - (c) a proton in the rubidium nucleus turns into a neutron

5  
Which of the following statements about Mars is true:

- BO
- (a) the planet has a dense atmosphere rich in carbon dioxide and sulphuric acid
  - (b) there is abundant evidence for the presence of water in the past
  - (c) it is larger than Venus

6  
The stratigraphic principle of superposition states that:

- AO
- (a) each layer of an undisturbed sequence is younger than the one beneath it
  - (b) there are many gaps in the geological record due to erosion
  - (c) layers of sedimentary rocks in an outcrop contain fossils in a definite sequence

7  
Which of these forms at a left bend in a right-lateral strike-slip fault:

- AO
- (a) fold and thrust mountains
  - (b) angular unconformities
  - (c) normal faults

8  
Which gas was not added to the atmosphere by early volcanic activity:

- B
- (a) nitrogen
  - (b) oxygen
  - (c) carbon dioxide

9  
Geologists recognize a reverse fault as one in which:

- AO
- (a) rocks above a dipping fault plane have moved upward
  - (b) the movement of the rocks is in response to a tensional force
  - (c) the hanging wall has moved downward with respect to the footwall

10  
Which of the following is characteristic of increasing metamorphic grade:

- B
- (a) schist and gneiss recrystallize into slate
  - (b) foliations become coarser and easier to detect with the naked eye
  - (c) crystal size decreases and rocks tend to become finer-grained

11

In a dome structure:

- (a) oil and gas are always present
- (b) the youngest rocks are exposed in the central core
- (c) the oldest rocks are exposed in the central core

12

Marble is considered to be a granoblastic rock since:

- (a) it is produced as a result of the fracturing of granite
- (b) it consists of larger grains embedded within a fine-grained matrix
- (c) its texture is described by equal-shaped crystals in the form of cubes and spheres

13

The number of radioactive atoms left after three half-lives have passed is:

- (a) one-third of the original population
- (b) one-sixth of the original population
- (c) one-eighth of the original population

14

Which statement about the geological time scale is true:

- (a) divisions between geological eras are defined by changes in fossil assemblages
- (b) Paleozoic rocks are older than Mesozoic rocks
- (c) the dinosaurs died out at the end of the Paleozoic era

15

Oil and gas is most likely to be trapped:

- (a) at the bottom of a syncline
- (b) at a zone of plate convergence
- (c) at the top of an anticline

16

Geologically, the oldest part of the North American continent is:

- (a) the coastal plain and continental shelf
- (b) the shield and interior platform
- (c) the folded and faulted mountain belts

17

Most geologists believe that the earliest fossil evidence of life on Earth occurred:

- (a) between the Paleozoic and Mesozoic eras
- (b) after the Late Heavy Bombardment period of impacts
- (c) prior to the Moon-forming event

18

Which statement best describes the nebular hypothesis:

- (a) the solar system developed from a rotating cloud of gas and dust
- (b) the Moon formed when a large extraterrestrial body impacted the early Earth
- (c) the core formed as iron and nickel migrated toward the center of the early Earth

19

Cross-cutting relationships enable geologists to:

- (a) determine the strength of rocks under stress
- (b) establish the relative ages of igneous intrusions and faults
- (c) distinguish between normal and reverse faults

20

A prograde metamorphic path describes:

- (a) the chemical reactions that occur between rocks and circulating fluids
- (b) changes in rocks as pressure and temperature increase
- (c) the sequence of minerals that crystallize as a magma cools

11