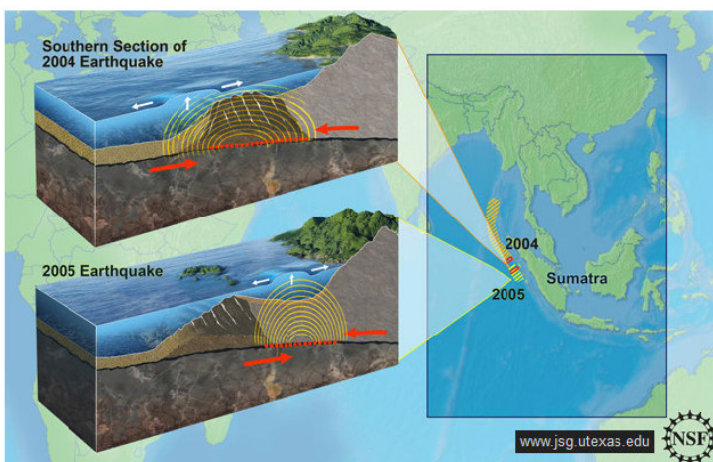


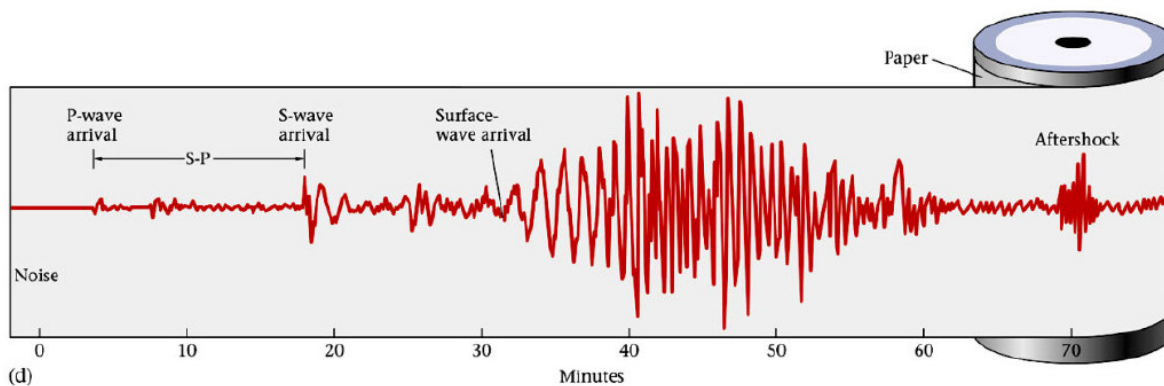
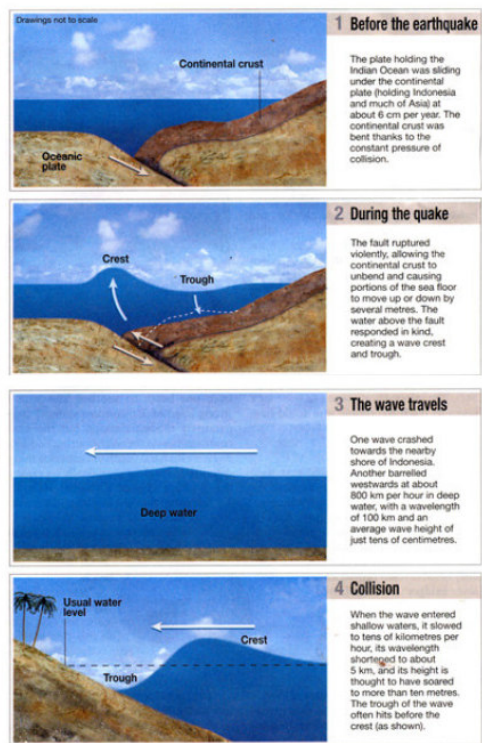
**PHY120A Exam 2 2018** 50 questions – 0.5 points each; 20 True/False, 30 Multiple Choice**True/False** *Mark the statement true or false.*

- \_T\_1. The focus of most earthquakes is less than 100 km.
- \_F\_2. The Richter scale is the most effective measure of an earthquake's magnitude.
- \_F\_3. An earthquake epicenter is that point where an earthquake's energy is released.
- \_F\_4. Elastodynamic earthquake analyses provide a unique fault-plane solution.
- \_T\_5. The S-wave shadow zone is evidence that the outer core is liquid.
- \_T\_6. 95% of earthquakes occur at tectonic plate boundaries.
- 48% \_T\_7. One step in earthquake magnitude represents about a 30-fold increase of released energy.
- \_T\_8. Positive, subsurface magnetic anomalies may indicate accumulations of iron-rich material.
- \_T\_9. Liquefaction is when earthquakes destabilize and move water-saturated sediment.
- \_F\_10. Coral reefs are present in any near-shore area with water quality that supports marine life.
- \_T\_11. Sediment includes minerals extracted from water by organisms to build their shells.
- \_T\_12. Crystalline is a term used to describe igneous and metamorphic rocks.
- \_F\_13. Compaction and cementation rarely occur together.
- 48% \_F\_14. Most tsunamis are caused by shallow earthquakes occurring along diverging tectonic plates.
- \_F\_15. Angular unconformities are used to help establish absolute rock ages.
- \_T\_16. A half-life is the time it takes for half of the parent element to decay to the daughter element.
- \_T\_17. Superposition means that undisturbed strata are oldest toward the top.
- \_F\_18. All compounds are soluble in water.
- \_F\_19. The earliest attempts at estimating the age of the Earth resulted in too old of planet.
- \_F\_20. Short-lived radioactive isotope pairs in igneous rocks provide the most accurate dates.

## TSUNAMI'S – The Sumatra 2004 and 2005 seismic events and associated tsunami's – more than 200,000 casualties



- Killer tsunamis are commonly caused by great (magnitude 7–8) earthquakes.
- Fault motion produced ocean bottom deformation, which generated the tsunamis.



**Multiple Choice** *Identify the choice that best completes the statement or answers the question.*

\_\_\_21. The two principle types of weathering include

- A. fast and slow
- B. chemical and biological
- C. biological and physical
- D. mechanical and chemical
- E. dynamic and chemical

\_\_\_22. Mechanical weathering DOES NOT include

- A. hydrolysis 52%
- B. abrasion 14%
- C. thermal contraction and expansion 20%
- D. crystal growth 14%
- E. pressure release

\_\_\_23. Liquefaction is when water-saturated sediment becomes

- A. compacted and denser.
- B. buried by new sediment, thereby expelling some liquid.
- C. mixed by burrowing organisms.
- D. mixed and destabilized to behave like a fluid.
- E. separated into liquid and solid fractions.

\_\_\_24. The guiding principle of geology is

- A. uniformitarianism
- B. stratigraphic succession
- C. time
- D. radiometric age dating
- E. the rock cycle

\_\_\_25. Surface waves generated by an earthquake

- A. travel faster than body waves. 15%
- B. travel slower than body waves 10%
- C. are less destructive than body waves
- D. are not common.
- E. B and C. 76%

\_\_\_26. Gravity anomalies at Earth's surface are unaffected by

- A. subsurface hydrocarbon resources 5%
- B. subsurface metal ore bodies
- C. differences in substrate density 10%
- D. differences in surface temperature 48%
- E. all of the above 38%

\_\_\_27. Limestone dissolving from contact with weakly acid rainwater is an example of

- A. Weathering 39%
- B. Abrasion
- C. Oxidation 24%
- D. Hydrolysis 24%
- E. Reef destruction 15%

\_\_\_28. Continental shelves are widest when associated with

- A. island arcs and volcanism.
- B. passive tectonic margins.
- C. intense earthquake activity.
- D. active tectonic trenches.
- E. ocean trenches.

\_\_\_29. The two types of glaciers are

- A. Continental and oceanic
- B. Valley and continental
- C. Fast and slow moving
- D. Valley and polar
- E. Polar and oceanic

\_\_\_ 30. The two types of glacial drift are

- A. erratics and dropstones
- B. pluvial and ephemeral
- C. moraines and erratics
- D. till and moraines
- E. till and stratified drift

\_\_\_ 31. Oxidation is a chemical reaction in which a compound

- A. gains protons      10%
- B. loses protons      15%
- C. gains neutrons      5%
- D. loses electrons      57%
- E. gains electrons      14%

\_\_\_ 32. Detrital sediment contains solid particles produced by

- A. mechanical weathering
- B. meteorite strikes
- C. karst processes
- D. metamorphic activity
- E. evaporation

\_\_\_ 33. The principle types of metamorphism are

- A. fast, slow, and retrograde
- B. schist, gneiss, and marble
- C. contact, dynamic, and regional
- D. shallow, deep, and hydrothermal
- E. structural, tectonic, and hydrothermal

\_\_\_ 34. Ripple marks are formed by

- A. sand moving up the slope of a dune
- B. sand settling down after crossing a dune crest
- C. mud baked in the sun
- D. foraging and burrowing organisms
- E. directional wind or water currents

\_\_\_ 35. Metamorphism involves

- A. fluid activity
- B. mineral crystallization
- C. water transport of elements
- D. heat and pressure
- E. all of the above

\_\_\_ 36. Transportation of sediment results in

- A. fossil development
- B. fossil growth
- C. rock particles always being in suspension
- D. rounding and sorting 67%
- E. all of the above 33%

\_\_\_ 37. The seismic energy released by an earthquake stems from

- A. porosity and permeability
- B. density
- C. plasticity
- D. elasticity
- E. fluidity

\_\_\_ 38. The magnitude of an earthquake is another term for

- A. its intensity.
- B. the damage created.
- C. the energy released.
- D. the duration of trembling.
- E. frequency of occurrence

\_\_\_39. Deep sedimentary deposits in the oceanic abyssal plains are

- A. very-fine grained 48%
- B. very thick bedded 19%
- C. coarse grained 5%
- D. turbidite deposits 29%
- E. unknown

\_\_\_40. Hornfels is a metamorphic rock

- A. resulting from the interaction of an igneous body with existing sedimentary rock
- B. resulting from the interaction of an igneous body with existing igneous rock
- C. resulting from dynamic recrystallization
- D. resulting from deep-seated shearing and uplift
- E. results from burial and compression

\_\_\_41. The major depositional settings are

- A. Glacial, rift basins, and mountain belts.
- B. Extensional, compressional, and neutral
- C. Continental, transitional, and marine
- D. Convergent, divergent, and transform
- E. Dynamic, hydrothermal, and contact metamorphic

\_\_\_42. A radioactive decay curve

- A. is linear 5%
- B. is geometric
- C. helps to determine the proportion of parent atom remaining 5%
- D. disregards time
- E. B and C 80%

\_\_\_43. A marine transgression occurs when sea level \_\_\_\_\_ with respect to the land

- A. falls
- B. rises
- C. fluctuates
- D. retreats

\_\_\_ 44. At a subsurface seismological boundary P- and S-waves are

- A. focused
- B. magnified
- C. reflected and refracted
- D. unaltered
- E. absorbed

\_\_\_ 45. Cross-cutting relationships are

- A. one of the fundamental principles of original horizontality
- B. one of the fundamental principles of absolute age dating
- C. one of the fundamental principles of relative age dating 76%
- D. one of the fundamental principles of stratigraphic succession

\_\_\_ 46. Surfaces within a stratigraphic sequence marking significant periods of time are

- A. subconformities
- B. malconformities
- C. proconformities
- D. unconformities
- E. broconformities

\_\_\_ 47. The type of rock is

- A. medium-grade metamorphic 76%
- B. low-grade metamorphic
- C. detrital sedimentary
- D. chemical sedimentary
- E. high-grade metamorphic

\_\_\_ 48. The type of rock is

- A. medium-grade metamorphic
- B. low-grade metamorphic
- C. detrital sedimentary
- D. chemical sedimentary 66%
- E. high-grade metamorphic



\_\_\_ 49. The type of rock is

- A. gneiss
- B. schist
- C. slate
- D. sandstone
- E. conglomerate

\_\_\_ 50. What are two minerals seen in the rock for question 47?

- A. Mica and garnet
- B. Hornblende and garnet
- C. Pyroxene and zircon
- D. Biotite and zircon
- E. Quartz and calcite