Historical Geology Review for exam 1 (Chapters 1-5)
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1. Geologic time scale – eons, eras, periods, times between eras
2. Plate boundaries – divergent, convergent
3. Age of the Earth
4. Natural selection
5. Important concepts this semester – deep time, plate tectonics, evolution of life
6. Scientific method
7. Concepts of plate tectonics
8. Fossil preservation
9. Stratigraphic principles – superposition, original lateral continuity, original horizontality, cross-cutting relationships, inclusions
10. Werner/Neptunism vs. Hutton & Playfair
11. William Smith, geologic map of England and fossil succession
12. Darwin, HMS Beagle, natural selection
13. Agassiz and Ice age evidence
14. Cope and Marsh and dinosaur wars
15. Grand Canyon geologic sequence, thickness, age
16. Prokaryotic vs eukaryotic organisms – differences, examples
17. Relative age dating
18. Radioactive age dating, half life
19. Period names and origins (meaning) of names
20. Isotope =
21. Unstable isotopes =
22. Uranium decays to lead, Potassium to argon,
23. Best rock types for age dating
24. C-14 used to date what time period
25. Oldest known minerals in Earth rocks
26. Luster, cleavage, hardness
27. Granite versus basalt, examples of locations
28. Conglomerate, sandstone, shale, limestone
29. Contact or regional metamorphism
30. Depositional environments – continental, transitional, marine
31. Turbidites – what and how formed
32. Eolian = dunes, what type of deposits
33. Estuary, delta, lacustrine
34. Hematite, red bed deposits
35. Well rounded, angular, well sorted, poorly sorted, clast supported, matrix supported = what environments?
36. Sedimentary structures – mud cracks, cross-bedding, ripple marks, graded bedding
37. Asymmetric ripples marks, symmetric ripple marks – current direction, up
38. Oolites
39. Sediments from stable vs. unstable tectonic conditions
40. Carbonate deposition
41. Evaporate environments and deposits

42. Definition of formation
43. Biofacies
44. Transgression, regression = vertical sequence, meaning
45. Lithostratigraphic correlation, chronostratigraphic correlation
46. Types of unconformities – angular unconformity, nonconformity, disconformity
47. Lithofacies maps, isopach map, paleogeographic map
48. Permineralization, replacement, carbonization, trace fossils, preservation of hard parts
49. Index fossil
50. Definition of species
51. Mendel/peas, mutation in genes,
52. Divergent margins, midoceani ridge, basalt, pillow lavas, ex.
53. Convergent margins, subduction zones, andesitic volcanoes, ex.
54. Earthquake distribution, Ring of Fire, subduction zones
55. Sea-floor spreading, magnetic stripes on ocean floor, polar wandering