

FOSSILS, DATING, AND GEOLOGIC TIME TEST REVIEW

/102 pts

NAME _____ HR ____

1. What is relative age dating?

2. What is uniformitarianism?

3. Describe the law of superposition

4. Describe the principle of original horizontality

What are the 5 ways rock layers get disturbed?

5.	
6.	
7.	
8.	
9.	

10. What is a break in the geologic record when rock layers are eroded or when sediment is not deposited for a long time?

Name the 3 types of unconformities then define them.

11.		12.	
13.		14.	
15.		16.	

17. What law states that a fault or igneous intrusion is always younger than the rock layers that it cuts through?

18. If rock layers get tilted, what kind of unconformity is that? _____

What are the ways to make a fossil?

19. buried under _____ in ocean

20. buried in _____ / mudslide / landslide on land

21. buried in volcanic _____

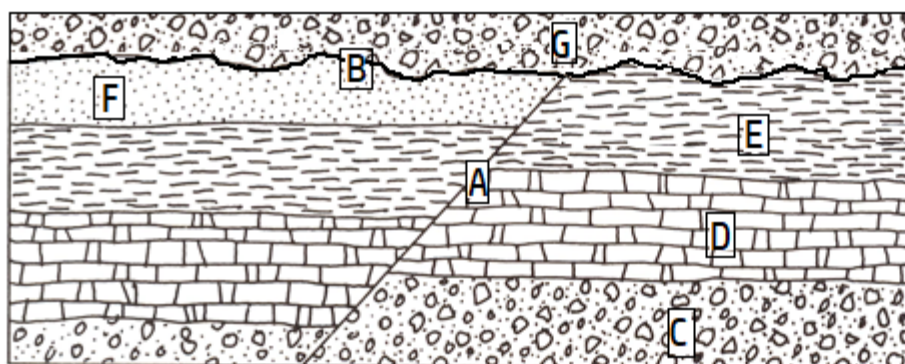
22. buried in snow/ glacier _____

23. buried in _____ pit


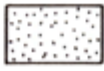


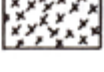



24. buried in tree _____ (amber)

25. buried in hot _____ of desert (mummification)

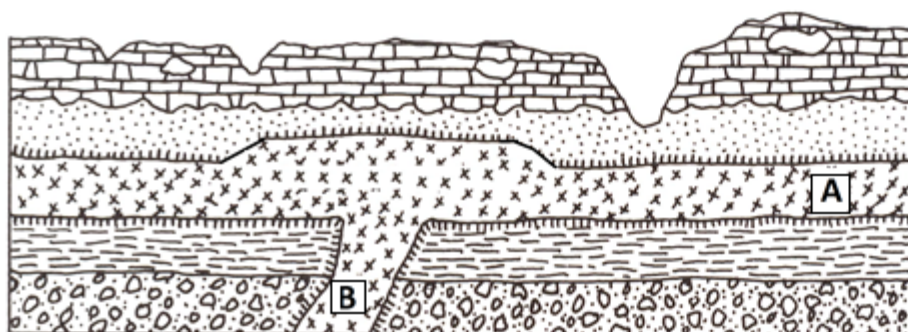
DRAWING #1



KEY

-  Limestone
-  Sandstone
-  Shale
-  Conglomerate
-  Basalt
-  Granite
-  Schist
-  Contact Metamorphism

DRAWING #2



DRAWING #1 QUESTIONS

26. Put A through G in order from oldest to youngest. B and A are events and the rest are rock layers.

27. What is the name of A? _____

28. What is the name of B? _____

29. Why is the age of a fault younger than the rock in which it is found? _____

30. Notice that F and E are sedimentary rock layers, and so is G. What type of unconformity is B?

DRAWING #2 QUESTIONS

31. Which is older the conglomerate or the shale? _____

32. Which is older the basalt or the shale? _____

33. Which is older the sandstone or the basalt? _____

34. What is another name for the basalt rock formation in diagram 2? _____

35. What is the name for portion A in diagram 2? _____

36. What is the name for portion B in diagram 2? _____

37. Explain how an older rock layer could appear on top of a younger rock layer. _____

38. If A had worn down a bit before the sandstone formed on top of it, what type of unconformity would it be?

Match the fossil types:

39.		Mummification	A	Frozen fossils form when organisms from the last ice age died and froze, slowing down the decay process.
40.		Amber	B	fossils form when pores in wood, bones, or shells fill with dissolved minerals (silica, calcite, pyrite) and crystallize over time
41.		Tar seeps/ asphalt	C	When original organic material partially decays, leaving behind a carbon film
42.		Freezing	D	Form in dry places where decomposing bacteria cannot live.
43.		Petrification	E	Fossilized dung can preserve information about what the animal ate
44.		Imprints	F	fossils form when an organism fell into an asphalt/tar pit while trying to drink the water above it. Creature is then preserved.
45.		Mold	G	A fossil that forms when sediments fill in the cavity left by a decomposing organism.
46.		Cast	H	A mark or cavity made in a sedimentary surface by a shell or other body part.
47.		Coprolites	I	fossils form when insects land on a tree and get covered in sap which hardens. Sometimes DNA can be extracted
48.		Trace fossil	J	Stones that were used in the digestive tract of some dinosaurs. (Like the stones in a bird's gizzard) They reveal that the dinosaur was a plant eater.
49.		Gastroliths	K	A fossilized mark that is formed in soft sediment by the movement of an animal (foot prints, burrows, boring, etc.)

50. What is absolute age dating? (radiometric dating)

Fill in the chart for parent and daughter isotopes:

	PARENT	DAUGHTER
Stable or unstable?	51.	52.
Radioactive or not?	53.	54.
Which is there more of when you have a younger rock?	55.	56.
Which is there more of when you have an older rock?	57.	58.

59. What is a half life? _____

Complete the chart below (you need a calculator)

Half lives	Percent of parent isotope	Percent of daughter isotope
0	60.	61.
1	62.	63.
2	64.	65.
3	66.	67.
4	68.	69.
5	70.	71.

72. An old rock is being tested for its age. The isotope inside it has a half life of 5 million years, the percent of parent isotope is 12.5%, and the percent of daughter isotope is 87.5%, how old is the rock?

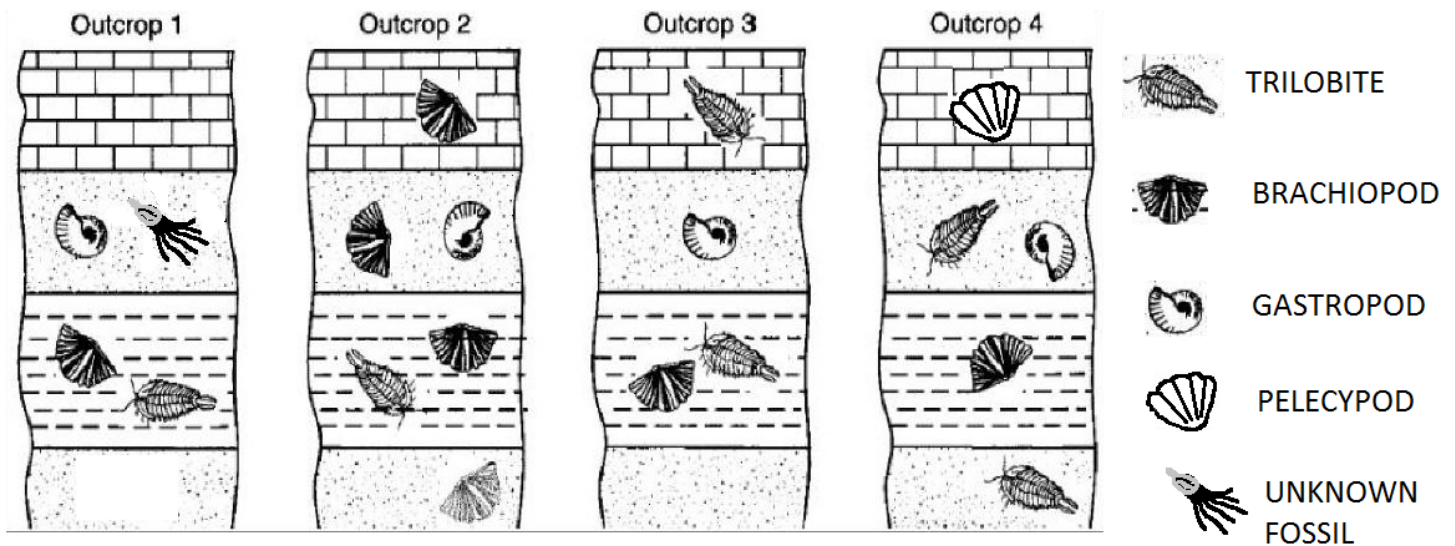
73. An ancient shell is being tested for its age. The isotope being measured has a half life of 7,000 years, the percent of parent isotope is 50%, and the daughter isotope is 50%. How old is the shell?

74. A trilobite is being tested for its age. The isotope inside it has a half life of 0.5 million years. The percent of the parent isotope is 6.25% and the daughter isotope is 93.75%. How old is the trilobite?

75. What is a fossil? _____

76. What is an index fossil? _____

A GOOD INDEX FOSSIL LIVED DURING A SHORT GEOLOGIC TIMESPAN AND IS WIDESPREAD. USE THE PICTURE BELOW TO ANSWER QUESTIONS FOLLOWING.



77. Which of the above creatures would be the best index fossil?

78. If the gastropod is known to be 60 million years old, what can you say about the sandstone it is found in? _____

79. Why wouldn't the trilobite above be a good index fossil? _____

80. Which creature above most recently appeared? _____

81. Name the 4 eras in the geologic time scale from oldest to youngest. (4 pts)

82. How are eras divided? _____

83. How are periods divided? _____

84. What is the name of the single landmass that used to be on earth? _____

85. If the earth changes too quickly, what might happen to species? _____

86. If the earth changes slowly, this allows for _____ to occur in species.

87. What was the main life form during the Precambrian era? _____

88. How did the Precambrian Era end? _____

89. How did the Paleozoic Era end? _____

90. Which Era is the "age of reptiles?" _____

91. Which Era is the "age of mammals?" _____

92. How is a hominid different from other primates? _____

93. What is the name of the earliest group of hominids? ("Lucy" was one) _____

94. Which hominid is the only one known for art, religious activities, and use of extensive tools?

95. Place the hominids in order from oldest to most recent. (5pts)

[homo habilis, homo sapien, australopithecines, homo erectus, homo Neanderthal]

1 _____

2 _____

3 _____

4 _____

5 _____