

Example questions for SMT 310 Exam 1.

1. What is the name of the crescent shaped region between the Mediterranean and the Persian Gulf? What is connection between this region and modern civilization? 1#9-10
2. “Lucy” the famed bipedal hominid fossil was from which species? Man#10
3. Which Primate was first to demonstrate use of fire? Man#13
4. Name one absolute and one relative dating method? Man#22
5. _____ is what is demonstrably true about nature. Man#25-26
6. _____ is the application of science and/or natural resources to improve human life. Man#27
7. The scratch plow was developed about 6M BP and is sometimes referred to as the mother of all technology. It was improved about 600 AD with the addendum of which two major parts? 1#20-21
8. Passing electricity through an electrical wire wound around an iron core produces _____. 1#22
9. The electronic relay switch comes in two varieties which both have only one moving part called the _____ or _____. 1#23
10. According to Brian Arthur, systems become more complex by adding _____ to them. Man#27-28
11. According to Brian Arthur, most everything becomes more complex do to added subsystems, which are designed to _____. Man#28-9
12. Throughout the last billion years there have been four major cooling periods each lasted for millions of years. What is currently believed to be causes for these major climate shifts? 1#1
13. Splitting apart the atom produces energy that is converted into electricity at utility plants. This process of splitting atoms is called _____. 2#21
14. What changes in farming technology during the 11th century were discussed in this portion of class? 3#6-9
15. What is the relationship between V & T in $R = PV/nT$? 2#24 and Readings
16. What was our “worst mistake” according to Jared Diamond? 1#17-18

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17. What sacrifices did early humans from the introduction of farming, the plow and agriculture endure? 1#18-19
18. The Normands had the advantage against the Saxons during the battle of Hastings because their mounted soldiers used _____ while the Saxons didn't. 3#2-3
19. The battle of Hastings ushered in the fully armored knight. What new weapon exposed the vulnerability of the fully armored knight during the battle of Agincourt thus began the end of the fully armored knight? 3#5
20. What other new weapon was demonstrated during the 15th century? 3#10
21. In England during the 15th century the longbow was weapon supreme. What were the two reasons for the ultimate demise of the long bow as weapon supreme? (Hint: one is social/economic and one is new technology) 3#10
22. Why does a vacuum pump pull water up only 30 feet and no higher? 3#13-15. (Consider the static force of atmospheric pressure).
23. Ptolemy's star tables were developed about 150 AD then seemingly forgotten until we see them again in Europe during the 15th century, 1400 years later. For what purpose do we find these star tables being used during the 15th century? 2#6
24. How many moving parts does the electronic relay have? 1#23 and Readings
25. The development of cash money increased trade through selective buying which increased trade. What are the three major changes to sailing ships and navigation discussed in class? 2#7
26. Wilson's cloud chamber showed us that charged particles (ions) trigger or "seed" cloud formation. What was it later discovered to demonstrate which aided us to built the first atomic bomb? 2#17-21
27. During the age of discovery mariners on their way West discovered the compass erred from true North. What is the cause of this aberration and where was it pointing to? 2#11-12
28. Who or what was Ben Nevis and how is it important in the discovery of nuclear fission? 2#17-20
29. In the equation $v=c/\lambda$, v and λ are _____ related? 2#24-5/Readings
30. What was the name of the tool discovered 2700 years ago, which was used to standardize precious metals? 2#2

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31. There were four farming developments discussed in class in Europe. They are the new plow, horseshoes, horse collar and _____. 3#6-9
32. What is the name of the ancient seaport, which had copyrights to all documents entering into it? 2#4-5
33. The longbow was weapon supreme during the 15th century but was replaced by the _____ in the 16th century. 3#10
34. The sternpost rudder, lateen sail, compass, printing, paper and gunpowder all have their origins in which country? 2#8 and 3#11-12
35. Contacting dissimilar metals together produces _____. 3#17-18
36. Given our current rate of consumption and estimated reserves how many years may we depend on fossil fuels? 3#22
37. Give two examples of different fossil fuels currently used today? 3#22
38. Explain how voice is changed into a fluctuating voltage in the early telephones? 3#19-21
39. What 1799 discovery allowed us to translate the ancient Egyptian hieroglyphs? Google it
40. In the scientific method or process an explanation about natural phenomena with little or no experimental fact is called a _____. Man#25-26
41. After genetic analysis of H. Neanderthal and H. Denisovan it is determined that Denisovans are a distinct species, separate to H. Sapiens and H. Neanderthal. Did these three species ever coexist. If so, approximately how many years did they coexist.? Is there any evidence of interbreeding between these different species.? If so, how much genetic similarity is there between Neanderthals or Denisovans and modern humans? Man#16-18