Study Guide Chapter 10 Soil and Glass

Forensic Science

1. Soil is naturally deposited materials that cover the earth’s surface and are capable of supporting plant growth.

2. 75% of earth is oceans, seas, and lakes.

3. 10% of the earth is used for agriculture.

4. Sir Arthur Conan Doyle wrote the books that featured Sherlock Holmes.

5. Georg Popp presented the first example of earth materials used as evidence in a criminal case.

6. Density, Magnetism, Particle size, Mineralogy, pH, Trace elements are 4 physical properties of soil.

7. The two chemical properties of soil are Trace elements and Fossils.

8. The statistical probability of a given sample having properties the same as another sample are very small.

9. How many minerals have been identified?

10. Natural & man made are the two types of aggregate minerals.

11. What are the 3 formations of rock?

12. Fossils are the remains of plants and animals.

13. Palynology is the study of pollens and spores.

14. Individual characteristics only if the soil has an unusual or specialized ingredient such as pollen, seeds, vegetation or fragments.
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Name: _____________________

Forensic Science

15. Sand is the term applied to natural particles with a grain diameter between 1/16 mm and 2 mm.

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17. Granite is the term applied to natural particles with a grain diameter between 1/16 mm and 2 mm.

18. Volcanic is the term applied to natural particles with a grain diameter between 1/16 mm and 2 mm.

19. Tufa is the term applied to natural particles with a grain diameter between 1/16 mm and 2 mm.

20. Silica is the term applied to natural particles with a grain diameter between 1/16 mm and 2 mm.

21. Soda-lime is used in plate and window glass, glass containers and electric light bulbs.

22. Soda-lead is used to create fine tableware and art objects.

23. Borosilicate is heat resistant, like Pyrex.

24. Tempered glass is used in side windows of cars.

25. Laminated glass is used in the windshield of most cars.

26. Refractive Index is the measure of light bending due to a change in velocity when traveling from one medium to another.

27. 2.23-2.36 is the density of Pyrex glass.

28. 2.46-2.49 is the density of window glass.

29. Immersion method is used to determine refractive index by lowering fragments into liquids whose refractive index is different.
**Match point**

30. ___ point is when the refractive index of the glass is equal to that of the liquid.

**Becke**

31. A ___ line is a halo like glow that appears around an object immersed in a liquid.

**Temperature**

32. The refractive index of a high-boiling liquid, usually a silicone oil, changes with ___.

**Radial**

33. ___ fracture lines radiate out from the origin of the impact; they begin on the opposite side of the force.

**Concentric**

34. ___ fracture lines are circular lines around the point of impact; they begin on the same side of the force.

**3R**

35. ___ rule radial cracks form a right angle on the reverse side of the force.

**Exit**

36. A high velocity projectile always leaves a wider hole at the ___ side of the glass.

**Intersections**

37. Cracks terminate at the ___ with others.

**Largest sample**

38. The glass sample should consist of the _____ that can be practically collected from each broken object.

**Diamond**

39. What has the highest refractive index?

1.333

40. What is the refractive index of water?

**Forensic Geology**

41. ___ is the legal application of earth and soil science.
42. Which bullet hole below was shot first?