

Name _____

“Power of the Sun” quiz

1. The solar energy that strikes the Earth’s surface for one hour is enough to provide all of the electricity needs of the Earth for [1 year].
2. Isaac Newton hypothesized that light was made up of particles that traveled in [straight lines].
3. Christian Huygens hypothesized that light spreads by [waves].
4. Thomas Young’s experiments gave evidence that the [wave] theory seemed correct.
5. Albert Einstein provided evidence that light is made up of packets of energy called [photons].
6. Who was right, Newton or Huygens? [Both]
7. The first “solar battery” was invented by which company? [Bell]
8. Silicon was used by Bell scientists because it is [abundant] and because it acts as a [semiconductor].
9. Solid silicon does not work electronically unless [impurities] are introduced.
10. The two most commonly used elements for silicon semiconductor impurities are [boron] and [phosphorous].
11. A P-N junction attracts holes to the [P] side and electrons to the [N] side.
12. Power photo cells were first used in what application? [Radios]
13. NASA wanted solar cells for what application? [space exploration]
14. Sputnik died after a few weeks. Why? [dead batteries]
15. Nearly every cell phone call passes through [solar powered] equipment.
16. The first major industrial solar electric users were in the [oil] industry.
17. Japan has gone to solar power so quickly because it has few [fossil fuel] resources.
18. Solar power is driven globally what which two countries? [Germany] and [Japan].
19. The world’s largest solar PV installation is in which country? [Germany].
20. Powerlight integrated solar panels provide what three benefits to industries? [electricity], [cooling], and [heating].
21. The main problem that has stopped solar electricity in the U.S. is [cost].
22. As solar PV costs come down, prices of energy from fossil fuels are [increasing].
23. The world’s largest publicly owned solar array is in which U.S. city? [San Francisco].
24. In many parts of the developing world, solar PV is ideal for power production. Why is this?
Many reasons...
25. Describe one method for transporting solar-cooled vaccines in rural parts of Africa. [camels – pretty neat!]