

Grade 9 – Unit 4

Electrical Principles and Technologies

Topic 4 - The use of electrical energy affects society and the environment

Name _____

Class _____

- 65% of electrical energy around the world is generated by the burning of ...
 - wood
 - hydrogen
 - fossil fuels**
 - dead plants
- To generate electrical energy, coal is used to produce steam that drives thi~
 - transformer
 - generator
 - turbine**
 - condenser
- Garbage is another source of fuel used to generate electrical energy. The particular type of garbage used is called
 - bio-sludge
 - biomass**
 - bio-matter
 - bioaccumulation
- Water can also be used to generate electrical energy. The energy conversion is ...
 - mechanical to gravitational to electrical
 - electrical to mechanical to gravitational
 - gravitational to electrical to mechanical
 - gravitational to mechanical to electrical**
- The International Space Station uses this type of energy to generate electricity for use on the station ...
 - chemical
 - solar**
 - wind
 - tidal
- A single windmill produces a small amount of electricity, but many connected together can generate a large amount of electricity. Many windmills connected together are called wind...
 - farms**
 - clusters
 - groups
 - arrays
- A fuel cell uses this to generate electricity ...
 - hydrogen**
 - oxygen
 - carbon dioxide
 - nitrogen

8. Many of the usable fuel resources we have, that are nonrenewable, are being used up. One of the following is a renewable resource.
- A. coal
 - B. natural gas
 - C. wood
 - D. methane gas
9. By-products, from the generation of electrical energy, can be harmful to living organisms and to the environment. One such by-product reacts with water to produce ACID RAIN. The chemical that does this is ...
- A. sulfur dioxide
 - B. nitrogen oxide
 - C. carbon dioxide
 - D. sulfuric oxide
10. Alberta uses a large amount of coal to generate electricity because it can be mined very easily. Strip mining has this negative impact ...
- A. the original natural environment cannot be fully restored
 - B. all species of animals lose their habitat permanently
 - C. soil contamination occurs and cannot be reversed
 - D. dangerous chemicals can leach into the water table
11. Sustainability means using resources at a rate that ...
- A. will eventually deplete them
 - B. can be maintained indefinitely
 - C. can generate more through regeneration
 - D. will compensate and eliminate waste
12. Using less energy will ensure that we will have energy in the future. Which of the following saves the most energy?
- A. Buying gas at the cheapest price
 - B. Using natural gas as a fuel
 - C. Buying an electric car
 - D. Buying a solar car
13. The very first electrical communication took place in 1844. Samuel Morse developed a series of dots and dashes (short and long electrical signals) to send messages from one place to another. The device that helped him accomplish that was the ...
- A. telephone
 - B. phonograph
 - C. telegraph
 - D. simple computer
14. There are many advantages to improving electrical technologies. Saving time, space and speed are just a few. However, one drawback of electrical technology advancement is ...
- A. convenience
 - B. sustainability
 - C. expense
 - D. independence

15. Technology has revolutionized the way we do things. The single most device that is able to convert all information into numbers, is the computer. These numbers, which are ones and zeros are called ...

- A. **binary**
- B. bits
- C. bytes
- D. data

16. Storing and transmitting the information that is converted into numbers is accomplished by different technologies. A compact CD player is able to scan these numbers with the use of a ...

- A. silicon chip
- B. **laser**
- C. electromagnetic coil
- D. photodetector

17. A hard drive in a computer is able to read and write information. The transmission of information happens when the hard drive sends information to the central processor after it ...

- A. stores the information
- B. writes the information
- C. converts the information
- D. **reads the information**

18. Access to technology has become an issue because some countries

- A. **are too poor to get wired**
- B. do not have the expertise to get involved
- C. have too many 'hackers' who interfere
- D. have unrestrictive laws enabling anyone to do what they want

Search engines were designed to sort out the '*information overload*' on the Internet. Describe an advantage of a **Search Engine** and a disadvantage.

Advantage - _____

Disadvantage - _____
