1. What is the renewable energy source?

A. Solar B. Biomass C. Nuclear D. Geothermal

2. Why should we develop renewable energy sources?

A. To lower emissions of carbon dioxide

B. To prevent environmental pollution.

C. To reduce waste

D. All above

3. This is not the process for producing biomass energy

A. Pyrolysis B. Gasification C. Combustion D. Reforming

4. What are the disadvantages of solar energy system?

A. The sun has got to shine.

B. The cost of solar panels and the systems range between $20k-40k

C. The light from the sun produces a very small amount of energy.

D. All above

5. A basic photovoltaic system is used to

A. Convert wind energy to electric source

B. Convert biomass to electric source

C. Convert geothermal source to electric source

D. Convert light energy into electric source.

6. A basic photovoltaic system consists of

A. Solar Panel, Battery, Regulator, and the load

B. Solar Panel, Connecting wires, Regulator, and the load

C. Solar Panel, Battery, Electrolyte, and Electrodes

D. Membrane, Battery, Regulator, and the load

7. What are the advantages of hydrogen fuel?

A. Very High Specific Energy

B. Efficiency

C. Clean

D. Versatile and easily scalable

E. All above

8. What are the two most common techniques to produce hydrogen gas utilized in fuel cells?

A. Electromagnetism and quantum mechanics

B. Steam reforming and electrolysis

C. Electrolysis and adsorption

D. Thermal conductivity and refraction

9. How do you refuel a fuel cell electric vehicle?

A. Fill the tank with water

B. Plug the vehicle into a charging station

C. Pump hydrogen gas directly into the tank

D. Pump gasoline into the tank

10. In terms of greenhouse gas emissions, how good or bad is hydrogen fuel?

A. Major contributor to greenhouse gas emissions

B. Lowest contributor of greenhouse gas emissions

C. Zero-emission fuel

D. Hydrogen cannot be used as fuel

11. How does electrolysis produce hydrogen?

A. By running electricity to combine hydrogen and water

B. By passing electricity into the water to separate it into hydrogen and oxygen

C. By separating water into hydrogen and oxygen and generating electricity

D. By passing electricity into the water to evaporate it into hydrogen

12. During electrolysis, the reaction undergoes

A. $O_2 + H_2O + \text{energy} \rightarrow 1/2H_2$

B. $H_2O + \text{energy} \rightarrow 1/2H_2 + O_2$

C. $1/2H_2 + O_2 \rightarrow H_2O + \text{energy}$

D. $H_2O + O_2 \rightarrow 1/2H_2 + \text{energy}$

13. Reforming of hydrogen carbon for producing hydrogen undergoes

A. $C_xH_y + 1/2O_2 + H_2O + \text{energy} \rightarrow mH_2 + nCO_2$

B. $C_xH_y + 1/2O_2 + \text{energy} \rightarrow mH_2 + nCO_2 + H_2O$

C. $C_xH_y + 1/2O_2 + H_2O \rightarrow mH_2 + nCO_2 + \text{energy}$

D. $H_2O + \text{energy} \rightarrow 1/2H_2 + O_2$

14. Hydrogen is a ……

A. Metal C. Non-metal B. Metalloid D. Solid

15. Why is hydrogen hazardous as fuel?

A. Because of high ignition and low combustion energy

B. Because low ignition and low combustion energy

C. Because of high ignition and high combustion energy

D. Because of low ignition and high combustion energy

16. Which of the following use hydrogen as fuel?

A. Fossil fuels

B. Anerobic digestion

C. Fuel cells

D. Cooking

17. Which of the following supplies of hydrogen gas?

A. Natural gas/biogas

B. Gasification of coal

C. Electrolysis

D. All of the above

18. How is hydrogen gas produced from fossil fuels?

A. Partial oxidation of hydrocarbon or coal

B. Electrolysis

C. Evaporation

D. Biomass gasification

19. How much purity of hydrogen gas produced via partial oxidation?

A. Less than 50 %

B. 100%

C. 97-98%

D. Less than 60%

20. Which of the following statement is correct for hydrogen?

A. Lightest, Most abundant, Colorless, Odorless and non-toxic

B. Heaviest, Most abundant, Colorless, Odorless and non-toxic

C. Lightest, Most abundant, Bad smell and very toxic

D. None of above statements