2024 Area Current Issue Test

1. Why is biomass still an important energy resource today?
   a) There is a lot of it and it is easy to access
   b) Many people don't have access to other energy resources
   c) It is easy to replant and grow new biomass resources
   d) It keeps lumberjacks employed

2. Which of the following is NOT a resulting effect of solar installation on forage production?
   a) More shade
   b) Increased soil moisture
   c) Late flower blooms
   d) Increased seed spreading

3. What is the lifespan of a wind farm?
   a) 5 years
   b) 20 years
   c) 75 years
   d) 100 years

4. What is the lifespan of a solar panel?
   a) 25-30 years
   b) 8-15 years
   c) 30-50 years
   d) 60-100 years

5. What is the lifespan of coal-gas plants/fossil fuel plants?
   a) 60-70 years
   b) 10-25 years
   c) 30-50 years
   d) 17-34 years

6. What is the average wind speed necessary for wind energy production?
   a. 15 MPH
   b. 2 MPH
   c. 9 MPH
   d. 30 MPH

7. What is the difference between electrical production between tracking and stationary solar panels?
   a. Tracking systems offer greater levels of energy output compared to fixed arrays
   b. Fixed arrays offer greater levels of energy output compared to tracking systems
   c. They create the same energy output
   d. Tracking systems don't exist and Stationary solar panels do

8. What percent of Ohio's energy is from Solar panel arrays?
   a. Less than 5%
   b. 50%-60%
   c. 20%-25%
   d. 100%

9. Out of the 50 states, where does Ohio rank for number of Solar panel fields (1 being the most and 50 being the least)?
   a. 12th
   b. 22nd
   c. 50th
   d. 5th

10. What percent of Ohio's energy is from wind farms?
   a. 40%-50%
   b. 70%-80%
   c. 100%
   d. Less than 2%

11. All of the following are examples of sustainable energy except?
   a. Solar
   b. Wind
   c. Fossil Fuels
   d. Geothermal Energy

12. Which renewable energy source is prominently utilized in Northwest Ohio for electricity generation?
   a. Wind
   b. Hydropower
   c. Geothermal Energy
   d. Solar

13. (LCOE) impacts decision-making in renewable energy projects. What is the levelized cost of electricity (LCOE)?
   a. The total lifetime cost of an energy project
   b. The average cost of electricity over the project's lifetime
   c. The upfront cost of building a renewable energy facility
   d. The cost of energy storage for intermittent renewables

14. In the context of solar power, what is the significance of the term "capacity factor"?
    a. The efficiency of converting sunlight to electricity
    b. The maximum output of a solar panel
    c. The ratio of actual energy produced to the maximum possible output
    d. The lifespan of a solar panel

15. All the following are climate change indicators except
    a. Decrease of greenhouse gases in atmosphere
    b. Sea level rise
    c. Ocean Acidification
    d. Increase of greenhouse gases in atmosphere

16. Explain the concept of "circular economy" in the context of sustainable energy.
    a. A closed-loop system for energy production
    b. Maximizing energy efficiency in a linear economic model
    c. Recycling used energy equipment
    d. Reducing the overall energy consumption of an economy

17. What is the role of energy storage technologies, such as batteries, in supporting renewable energy integration?
    a. To increase energy production from renewable sources
    b. To store excess energy for use during periods of low renewable generation
    c. To convert renewable energy into a more stable form
    d. To reduce the need for renewable energy subsidies

18. How do microgrids contribute to the resilience and reliability of renewable energy systems?
    a. Reducing the efficiency of renewable energy sources
    b. By isolating from the main grid during peak demand
    c. By providing localized power generation and distribution
    d. By relying solely on conventional energy sources

19. What is the concept of "community solar," and how does it differ from traditional solar installations?
    a. Solar panels installed in remote areas
    b. Solar farms owned and shared by a community
    c. A technique for harnessing solar energy in cold climates
    d. Solar-powered community centers

20. Which renewable energy source is often associated with geothermal power plants?
    a. Biomass
    b. Underground coal gasification
    c. Tidal energy
    d. Heat from the Earth’s interior

21. What primary raw material is commonly used in the production of biodiesel?
    a. Corn
    b. Soybeans
    c. Algae
    d. All of the above

22. What is the process by which solar panels convert sunlight into electricity?
    a. Photovoltaic effect
    b. Solar thermal conversion
    c. Solar radiation amplification
    d. Solar energy absorption

23 What is the average lifespan of typical solar panels used for electricity generation?
    a. 5-10 years
    b. 15-20 years
    c. 25-30 years
    d. 40-50 years

24. Which of the following is a direct use of geothermal energy?
    a. Electricity generation
    b. Heating buildings
    c. Fuel for vehicles
    d. Battery storage

25. Which one of the following is a sustainable and renewable resource?
    a. Oil
    b. Gas
    c. Coal
    d. Wood

26. Which renewable energy source has the highest energy density per unit mass?
    a. Wind energy
    b. Solar power
    c. Biomass energy
    d. Nuclear power

27. Which renewable energy source involves harnessing the kinetic energy of ocean tides and currents to generate electricity?
    a. Tidal energy
    b. Wave energy
    c. Ocean thermal energy conversion (OTEC)
    d. Marine biomass

28. What is one thing that Ohio can do to increase the amount of renewable/sustainable resources available for future generations?

a. Create wetlands
b. Plant more trees
c. Improve wildlife habitat
d. All of the above

29. What renewable energy source involves capturing and utilizing the methane produced by decaying organic matter in landfills or waste treatment facilities?

a. Wind energy
b. Biomass energy
c. Geothermal energy
d. Hydroelectric power

30. Which of the following is a potential environmental challenge associated with large-scale deployment of wind turbines?

a. Noise pollution
b. Visual impact
c. Bird and bat collisions
d. All of the above

Written By:
Kevin Edinger - NRCS
Lydia Archambo - Allen SWCD
Jacob Prokop - Allen SWCD