

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?
- To increase energy production from renewable sources
 - To store excess energy for use during periods of low renewable generation
 - To convert renewable energy into a more stable form
 - To reduce the need for renewable energy subsidies
18. How do microgrids contribute to the resilience and reliability of renewable energy systems?
- Reducing the efficiency of renewable energy sources
 - By isolating from the main grid during peak demand
 - By providing localized power generation and distribution
 - By relying solely on conventional energy sources
19. What is the concept of "community solar," and how does it differ from traditional solar installations?
- Solar panels installed in remote areas
 - Solar farms owned and shared by a community
 - A technique for harnessing solar energy in cold climates
 - Solar-powered community centers
20. Which renewable energy source is often associated with geothermal power plants?
- Biomass
 - Underground coal gasification
 - Tidal energy
 - Heat from the Earth's interior
21. What primary raw material is commonly used in the production of biodiesel?
- Corn
 - Soybeans
 - Algae
 - All of the above
22. What is the process by which solar panels convert sunlight into electricity?
- Photovoltaic effect
 - Solar thermal conversion
 - Solar radiation amplification
 - 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

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