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***** EXAMINATION *****

A GIS METHOD FOR DEVELOPING WIND SUPPLY CURVES

1. **A supply curve is expressed in units**

   a) of installed nominal capacity
   b) of generated capacity
   c) of megawatts
   d) Any of the above

2. **The GIS system contains data that could be used to calculate**

   a) the monthly energy generation at any given level of supply
   b) the annual energy generation at any given level of supply
   c) the annual energy generation at any level of supply
   d) the annual energy generation at any level of energy

3. **Annual generation will vary**

   a) with the type of coal used
   b) with the type of wind speed
   c) with the level of supply
   d) None of the above

4. **The capacity factor decreases**

   a) as the supply increases
   b) when less favorable sites are included
   c) Both a and b
   d) None of the above

5. **The wind power data with the power curve of the wind turbines**

   a) are used to calculate the capacity factor of the turbine
   b) are used to calculate the cell factor of the turbine
   c) are used to calculate the estimated capacity of the turbine
   d) are used to calculate the peak capacity of the turbine

6. **Together with cost and finance parameters, the capacity**

   a) factors determine the loss of energy
   b) factors determine the levelized cost of energy
   c) factors determine the initial cost of energy
   d) Both b and c

7. **The GIS software aggregates the map data to develop**

a) the geospatial supply curve
b) the amount of energy required
c) the amount of wind required
d) All of the above

8. **The wind resources is represented as**

a) annual wind power grid
b) annual wind power distribution
c) annual wind power density
d) annual wind power porosity

9. **Sites for wind power may be unavailable because**

a) of land use
b) of environmental factors
c) Both a and b
d) None of the above

10. **A suitable site for wind power is**

a) a water body
b) an environmentally sensitive area
c) a village area
d) None of the above

11. **The cost of energy from new capacity on an electric grid depends**

a) on the transmission facilities that need to be added
b) on the height of the wind turbines
c) on the width of the wind turbine blades
d) All of the above

12. **The cost of wind energy depends on the**

a) cost of the turbine
b) distance to an existing transmission line
c) annual operating cost
d) All of the above

13. **The effect of mountainous terrain on wind energy is**

a) some increase in wind turbine construction
b) a significant increase in transmission line construction
c) Both a and b
d) None of the above

14. **Factors influencing wind capacity are**

a) land use
b) terrain
c) pattern of wind direction and turbines used
d) All of the above

15. **The density of turbines is generally**

a) an increasing function of slope
b) a decreasing function of slope
c) a decreasing function of turbine height
d) a decreasing function of land use

16. **The ability of a GIS to spatially represent and relate different**

a) data sets enables development of the geospatial supply curve
b) data sets enables development of system capacity
c) Both a and b
d) None of the above

17. **The evaluation of potential installed wind capacity is**

a) based on terrain
b) based on land-use
c) based on exclusion factors
d) All of the above

18. **The cost of energy for an individual site depends on**

a) the wind loss
b) the turbines
c) the wind resource
d) Any of the above

19. **The cost of wind energy depends on**

a) distance to load centers
b) distance to transmission lines
c) proximity to hydropower resources
d) All of the above

20. **The effect on the costs by government is**

a) taxation
b) incentives for building the wind turbines
c) Both a and b
d) None of the above

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