21. α-decay is an example of

    (A) barrier penetration

    (B) Coulomb repulsion

    (C) spontaneous fission

    (D) induced fission

22. A square metallic loop of side L, carries a current I. The magnetic field at the center of loop is

    (A) directly proportional to L

    (B) inversely proportional to L

    (C) independent of L

    (D) directly proportional to $L^3/2$

23. The field of magnetic vector $\vec{B}$ is always

    (A) irrotational

    (B) solenoidal

    (C) non-solenoidal

    (D) both irrotational and non-solenoidal

24. The equation $\vec{\nabla} \times \vec{H} = \epsilon \dfrac{\partial \vec{E}}{\partial t}$ is valid in

    (A) dielectrics when currents are present

    (B) dielectrics when no currents are present

    (C) dielectrics when time varying currents are present

    (D) no case

25. Given $n+1$ data points $(x_o, y_o), (x_1, y_1), \cdots, (x_{n-1}, y_{n-1}), (x_n, y_n)$, and assume you pass a function $f(x)$ through all the data points. If now the value of the function $f(x)$ is required to be found outside the range of given x-data, the procedure is called

    (A) extrapolation

    (B) interpolation

    (C) guessing

    (D) regression

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