وزارة التعليم العالى
المعهد العالى للهندسة والتكنولوجيا بالمنزلة

(Quiz 1)
Physics (3)

✓ Choose

1. Absorptivity(a) of hypothetical body equal…….

   (0, 1, 2, no correct answer)

2. At absolute zero temperature, the thermal radiation will ……..

   (vanish, found, no correct answer)

3. P_{rad} at Stefan-Boltzmann law depend on ……. , and …….

   (ε and σ, ε and A, σ and T^4, A and T^4)

4. The mathematical relation of Wien's law …….

   ($\lambda T^4 = b$, $\lambda A = b$, $\lambda T = b$)

5. The permittivity of material related to …….. but the permeability related to ……..

   (electric field and magnetic field, magnetic field and electric field, electric and speed of light)

6. From de Broglie relation, the relation between λ and v …….

   (direct, inverse, no correct answer)

✓ Write the mathematical relation of

1. Planck's law of thermal radiation.
2. De Broglie relation.
3. Speed of light in space related to σ, ε.

✓ Problems

1. A black body at 3000°K emits radiation. Calculate **monochromatic emissive power** at 7 mm wave length? Given (h = 6.626×10^{-34} J.s, C= 3×10^8 m/s).

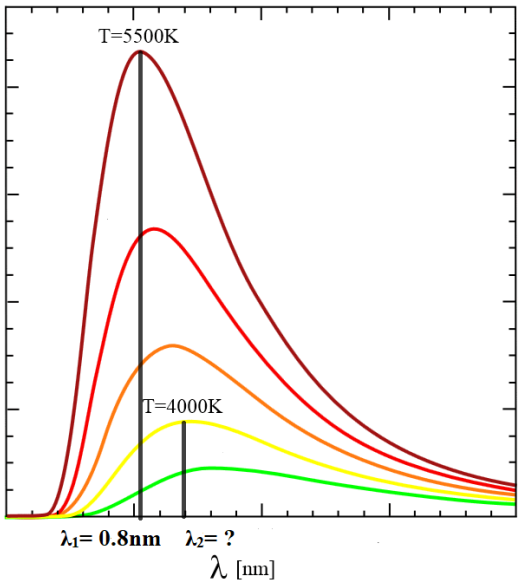
With wishes for success
Dr/ Ali Samir Awad

وزارة التعليم العالى
المعهد العالى للهندسة والتكنولوجيا بالمنزلة

(Quiz 1)
Physics (3)

2. What is the **wavelength of an electron** moving at 5.31 x 10^6 m/sec? Given: mass of electron= mass of electron= 9.11x10^{-31} kg and h= 6.626 x 10^{-34} J·s.

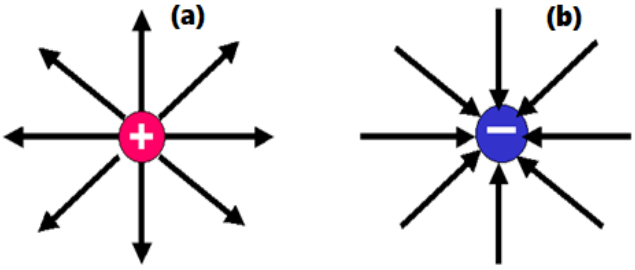
3. From this figure, calculate the **value of λ_2**



✓ **From this Figure:**

Determine the graph represent

❖ **(A)**



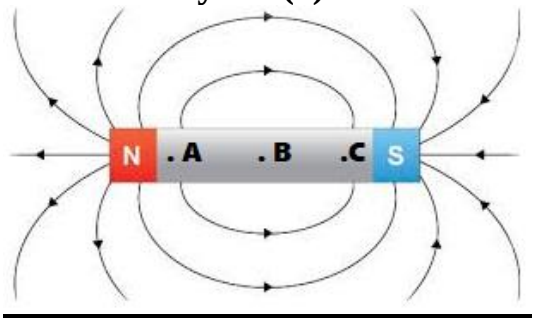
(1) At (a) Div (E)…… (2) At (b) Div (E)……

❖ **(B)**

With wishes for success
Dr/ Ali Samir Awad

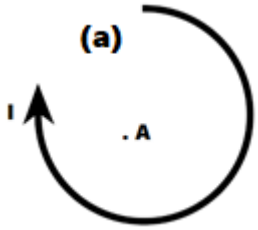
وزارة التعليم العالى
المعهد العالى للهندسة والتكنولوجيا بالمنزلة

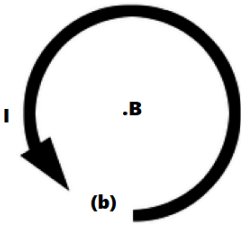
(Quiz 1)
Physics (3)



(1) At (A) Div (B)…… (2) At (B) Div (B)……

❖ **(C)**



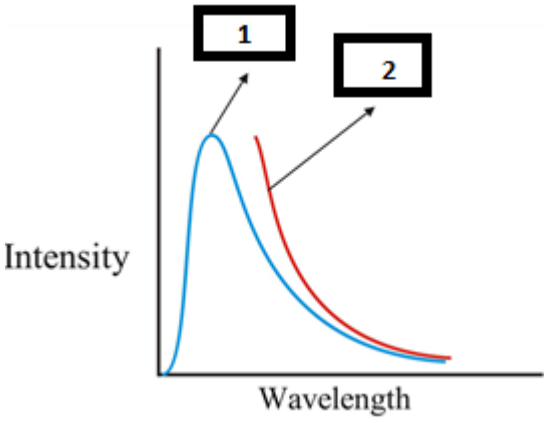


(1) Curl (I) …… (2) Curl (I)……

❖ **(D)**

Graph (1) represented …….

Graph (2) represented …….



With wishes for success
Dr/ Ali Samir Awad