



## Electromagnetic Waves-L3

1. Which rays of the EM spectrum is responsible for Green House Effect?

- A. Infrared rays
- B. Ultraviolet rays
- C.  $X$ -rays
- D. Radio-waves

2. In electromagnetic wave, the phase difference between electric and magnetic field vectors,  $\vec{E}$  and  $\vec{B}$  respectively is :

- A. 0
- B.  $\pi/2$
- C.  $\pi$
- D.  $\pi/4$

3. Which of the following rays is not an electromagnetic wave?

- A.  $\beta$ -rays
- B. Heat rays
- C.  $X$ -rays
- D.  $\gamma$ -rays

4. The condition under which a microwave oven heats up a food item containing water molecules most efficiently is -

- A. Frequency of the microwaves  $\geq$  Resonant frequency of the water molecules
- B. Frequency of the microwaves  $<$  Resonant frequency of the water molecules
- C. Frequency of the microwaves = Resonant frequency of the water molecules
- D. Frequency of the microwaves  $>$  Resonant frequency of the water molecules

5. For the Faraday's law of electromagnetic induction,

$$\oint \vec{E} \cdot d\vec{l} = -\frac{d\phi_B}{dt}$$

Which relation between electric force  $\vec{F}$  on a charge  $q$  and electric field  $\vec{E}$  of the given equation is true?

A.  $\vec{F} \geq q\vec{E}$

B.  $\vec{F} = q\vec{E}$

C.  $\vec{F} > q\vec{E}$

D.  $\vec{F} < q\vec{E}$

1. (A)
2. (A)
3. (A)
4. (C)
5. (B)