

King Fahd University of Petroleum and Minerals
Department of Physics

Name:
ID#:

PHYS 205 prelab Quiz-11/25/2020
Due time 12:30 pm

Show detailed solution using **your hand writing only on white paper**, typing or printing will not be accepted.
Then, take clear image of your answer and then send it to my email

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Q: In Balmer series for an excited Hydrogen atom, and utilizing the following equation:

$$\frac{1}{\lambda} = R \left(\frac{1}{n_{\text{low}}^2} - \frac{1}{n_{\text{high}}^2} \right),$$

for the wavelength of the light, where R is the Rydberg constant,

$$R = \frac{me^4}{8\epsilon_0^2 h^3 c} = 1.097\,373 \times 10^7 \text{ m}^{-1}.$$

calculate in details, the following:

(a) The longest possible wavelength of an emitted photon?

(b) The shortest possible wavelength of an emitted photon?