Physical Chemistry ACS Final questions with correct answers

What is the order of the electromagnetic spectrum from high to low energy? Answer Gamma rays, x-rays, UV, visible, IR, microwaves, radio

What transitions occur in the microwave spectrum? - Answer Rotational

What transitions occur in the IR spectrum? - Answer Vibrational with accompanying rotational fine structure bands

What transitions occur in the UV-vis spectrum? - Answer Electronic

In quantum mechanics, energy levels exist as multiples of what number? - Answer Planck's constant, h

What is the ultra-violet catastrophe? - Answer The classical mechanics equation for frequency distribution predicts that heating an object should create blackbody radiation of gamma rays of infinite intensity.

How was the ultra-violet catastrophe solved? - Answer It was assumed that energy exists in discrete units as multiples of Planck's constant, h.

What does classical mechanics predict about the photoelectric effect? - Answer Both the number of electrons emitted from a material and their energy should be proportional to intensity of the incident light beam

Physical Chemistry Acs Exam 2013 Answers

Thomas Griffiths

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