**KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS**

**DEPARTMENT OF PHYSICS**

**PHYS 422-222**

**Nuclear and Partcile Physics**

**HW-7 Solutions**

**Due by 19 March 2023**

**Problems are from Ch.9 of Textbook and lecture notes and are equally weighted (5 pts each)**

**Attempt the problems by yourself first, and then seek help if needed.**

**If you use a reference/solution manual, mention it and you will get full credit for a correct answer.**

**Please submit good PDF copy by email to khiari@kfupm.edu.sa**

**Q1. Pb # 9.3**

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**Solution**

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**Q2. Pb # 9.14**

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**Solution**

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**Q3. Pb # 9.18**

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**Solution**

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**Q4. The graph below refers to the decay scheme of a 10 source of 42K inside a small spherical aluminum capsule whose walls are just thick enough to absorb all β rays. (a) What is the required thickness of the walls? (b) What is the number of gamma rays transmitted? (c) What is the fraction of absorbed photons? (d) What is the dominant mode of absorption of photons?**



**Solution**

1. ,
2. Compton Scattering