

Daffodil International University

Course Name: Physics II Course Code: phy-102 Semester: Summer 2026

Teacher Initial: MAM Quiz No: 03 Date: 27/02/26 Time: 40 min

Section: 70_G

1. Why Scientists needed Bohr atomic model instead of Rutherford model. 03
2. Prove that decay constant is inversely proportional to Half-life of radioactive element. 06
3. The half-life of radon is 6 days. What is the value of decay constant and after days $1/10^{\text{th}}$ part of the initial quantity of Radon will remain unchanged? 03
4. The decay constants of two radioactive element A and B are 0.232 d^{-1} and 0.367 d^{-1} respectively.
 - (a) Find the mean life of element B.
 - (b) Will the required time to decay 65% of both the elements same or not -give your opinion with mathematical analysis. 03