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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 1/10th 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**

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