

## Worksheet: Nuclei

Madhya Pradesh State Board · Class 12 · Physics · 5 questions · 13 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 13

**Q1.** A substance has a 10-day half-life. How much of a 1 g sample remains after 30 days? *[2 marks]*

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**Q2.** A sample's activity falls from 240 Bq to 30 Bq in 6 hours. Find the half-life. *[3 marks]*

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**Q3.** Find the binding energy of helium-4 ( $m_p = 1.007825$ ,  $m_n = 1.008665$ ,  $m_{\text{He}} = 4.002603$  u). *[3 marks]*

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**Q4.** A nuclide decays to 1/16 of its amount in 20 days. Find half-life and decay constant. *[2 marks]*

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**Q5.** Find the energy released when 1 g of U-235 fissions (~200 MeV each). *[3 marks]*

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