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NEET NUCLEI — NUCLEAR FUSION AND ENERGY GENERATION IN STARS — PYQS

Max. Marks: 24 **Questions:** 6

Section A (MCQ) — 6 questions

Q.1 A certain mass of Hydrogen is changed to Helium by the process of fusion. The mass defect in fusion reaction is 0.02866 u. The energy liberated per u is (given 1 u = 931 MeV) [NEET 2013]

(1) 6.675 MeV (2) 13.35 MeV
(3) 2.67 MeV (4) 26.7 MeV

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Q.2 Fusion reaction takes place at high temperature because [AIPMT 2011 (Prelims)]

(1) nuclei break up at high temperature
(2) atoms get ionised at high temperature
(3) kinetic energy is high enough to overcome the Coulomb repulsion between nuclei
(4) molecules break up at high temperature

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Q.3 In the reaction ${}^{2}_{1}H + {}^{3}_{1}H \longrightarrow {}^{4}_{2}He + {}^{1}_{0}n$, if the binding energies of ${}^{2}_{1}H$, ${}^{3}_{1}H$ and ${}^{4}_{2}He$ are respectively a, b and c (in MeV), then the energy (in MeV) released in this reaction is [AIPMT 2005]

(1) a + b + c (2) a + b − c (3) c − a − b (4) c + a − b

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Q.4 If in a nuclear fusion process the masses of the fusing nuclei be m_1 and m_2 and the mass of the resultant nucleus be m_3, then [AIPMT 2004]

(1) $m_3 = m_1 + m_2$ (2) $m_3 = |m_1 - m_2|$
(3) $m_3 < (m_1 + m_2)$ (4) $m_3 > (m_1 + m_2)$

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Q.5 Solar energy is mainly caused due to [AIPMT 2003]

(1) burning of hydrogen in the oxygen
(2) fission of uranium present in the Sun
(3) fusion of protons during synthesis of heavier elements
(4) gravitational contraction

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Q.6 Which of the following are suitable for the fusion process? [AIPMT 2002]

(1) light nuclei
(2) heavy nuclei
(3) elements lying in the middle of the periodic table
(4) middle elements, which are lying on binding energy curve.

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ANSWER KEY

Ques.	1	2	3	4	5	6					
Ans.	1	3	3	3	3	1					