

## 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

Scan or tap for the full solution



**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

Scan or tap for the full solution



**Q.3** In the reaction  ${}^2_1\text{H} + {}^3_1\text{H} \longrightarrow {}^4_2\text{He} + {}^1_0\text{n}$ , if the binding energies of  ${}^2_1\text{H}$ ,  ${}^3_1\text{H}$  and  ${}^4_2\text{He}$  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)  $c + a - b$

Scan or tap for the full solution



**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)  $m_3 > (m_1 + m_2)$

Scan or tap for the full solution



**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

Scan or tap for the full solution



**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.

Scan or tap for the full solution



### ANSWER KEY

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