St. Lawrence High School
A Jesuit Christian Minority Institution
Term : Test

Work Sheet – 4

Class – X   Subject – Physical Science   Date – 23.11.20

Chapter – Atomic Nucleus

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Choose the correct option for the following questions. $1 \times 15 = 15$

1. The strongest force in the universe is
   a. Gravitational force   b. Magnetic force   c. Coulomb force   d. Nuclear force

2. The weakest force in the universe is
   a. Gravitational force   b. Magnetic force   c. Coulomb force   d. Nuclear force

3. Nuclear force is a
   a. Short range force   b. long range force   c. charge dependent force   d. none of these

4. The speed of β particle in vacuum is (c = speed of light in vacuum)
   a. Equal to c   b. $\frac{c}{10}$ c. in between $\frac{3}{5}c$ and $\frac{9}{10}c$ d. none of these

5. When a β particle is emitted then the mass number is
   a. Decreased by 1
   b. Increased by 1
   c. Remains unchanged
   d. Decreased by 2

6. The nuclear attractive force acts between
   a. Proton and proton   b. proton and neutron   c. neutron and neutron   d. all of these

7. Emission of which ray will not create a new element?
   a. $\alpha - ray$ b. $\beta - ray$ c. $\gamma - ray$ d. all of these

8. Which ray has highest penetrating power
   a. $\alpha - ray$ b. $\beta - ray$ c. $\gamma - ray$ d. all three has equal penetrating power

9. Which ray has highest wavelength?
   a. $\alpha - ray$ b. $\beta - ray$ c. $\gamma - ray$ d. all three has equal wavelength

10. What will be atomic number of the product nucleus, if it is formed by the radioactive decay of one α, one β and one γ particle from U_{92}^{238}?
    a. 89   b. 90   c. 91   d. 92

11. What will be the mass number of the product nucleus in the above case?
    a. 236   b. 237   c. 238   d. 239

12. The ray which is attracted by the negative electric field is

a. $\alpha - ray$ b. $\beta - ray$ c. $\gamma - ray$ d. none of these

13. The ray which has highest ionization potential is
    a. $\alpha - ray$ b. $\beta - ray$ c. $\gamma - ray$ d. all three has equal ionization potential

14. Natural radioactivity was first discovered by
a. Henry Becquerel   b. Piere Curie   c. Madame curie   d. Rontgen

15. If U_{92}^{238} emits one β particle, then what will be the number of neutrons present in the nucleus of the product element?
a. 93   b. 146   c. 145   d. 147

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