



St. Lawrence High School  
A Jesuit Christian Minority Institution



Term : Test

Solution of Work Sheet – 4

Class – X

Subject – Physical Science

Date – 23.11.20

Chapter – Atomic Nucleus

Choose the correct option for the following questions.

1 × 15 = 15

- The strongest force in the universe is  
a. Gravitational force      b. Magnetic force      c. Coulomb force      **d. Nuclear force**
- The weakest force in the universe is  
a. **Gravitational force**      b. Magnetic force      c. Coulomb force      d. Nuclear force
- Nuclear force is a  
a. **Short range force**      b. long range force      c. charge dependent force      d. none of these
- The speed of  $\beta$  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
- When a  $\beta$  particle is emitted then the mass number is  
a. Decreased by 1  
b. Increased by 1  
**c. Remains unchanged**  
d. Decreased by 2
- The nuclear attractive force acts between  
a. Proton and proton      b. proton and neutron      c. neutron and neutron      **d. all of these**
- Emission of which ray will not create a new element?  
a.  $\alpha$  – ray      b.  $\beta$  – ray      **c.  $\gamma$  – ray**      d. all of these
- Which ray has highest penetrating power  
a.  $\alpha$  – ray      b.  $\beta$  – ray      **c.  $\gamma$  – ray**      d. all three has equal penetrating power
- Which ray has highest wavelength?  
a.  **$\alpha$  – ray**      b.  $\beta$  – ray      c.  $\gamma$  – ray      d. all three has equal wavelength
- What will be atomic number of the product nucleus, if it is formed by the radioactive decay of one  $\alpha$ , one  $\beta$  and one  $\gamma$  particle from  $U_{92}^{238}$ ?  
a. 89      b. 90      **c. 91**      d. 92
- What will be the mass number of the product nucleus in the above case?  
a. **236**      b. 237      c. 238      d. 239
- 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  $\beta$  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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