

Directions: Choose the letter of the correct answer.

1. What is the approximate nuclear radius of ${}^{19}_9\text{F}$?
 - a. $2.50 \times 10^{-15} \text{ m}$
 - b. $2.59 \times 10^{-15} \text{ m}$
 - c. $3.20 \times 10^{-15} \text{ m}$
 - d. $3.64 \times 10^{-15} \text{ m}$
2. Which of the following nuclides is probably the most unstable?
 - a. ${}^4_2\text{He}$
 - b. ${}^{40}_{20}\text{Ca}$
 - c. ${}^{209}_{83}\text{Bi}$
 - d. ${}^{242}_{93}\text{Cm}$
3. ${}^{239}_{92}\text{U}$ is an unstable isotope of uranium. To become more stable, it will most probably undergo
 - a. α -decay
 - b. electron capture only
 - c. positron emission only
 - d. both positron emission and electron capture
4. The difference between the calculated atomic mass and the actual atomic mass of a nuclide is termed as:
 - a. mass defect
 - b. critical mass
 - c. binding energy
 - d. nucleon number
5. Which of the following is/are TRUE for ${}^{92}_{43}\text{Tc}$?
 - a. It has 49 neutrons.
 - b. It has 43 electrons.
 - c. The nuclide is radioactive.
 - d. All of the above