STRUCTURE OF THE ATOM

REVISION WORKSHEET

CLASS IX

SECTION A(1 mark questions)

(A) Multiple Choice Questions

Q1. Rutherford's alpha scattering experiment resulted in the discovery of :

a. Electron
b. Proton
c. Nucleus in the atom
d. Atomic mass

Q2. Which of the following is are true for an element

a. Atomic number = number of protons + number of electrons
b. Mass number = number of protons + number of neutrons
c. Atomic mass = number of protons = number of neutrons
d. Atomic number = number of protons = number of electrons

i. a & b ii. a & c iii. b & c iv. b & d

Q3. Elements with valency 1 are

a. always metals
b. always metalloids
c. either metals or non metals
d. always non metals

Q4. Isotopes contain

a. Same nuclear charge but different mass number
b. Different nuclear charge but same mass number
c. Same nuclear charge and same mass number
d. Same number of neutrons

(B) Assertion and Reasoning

Direction : in the following questions , a statement of assertion (A) is followed by a statement of reason (R) . Mark the correct choice as :

a. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)
b. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A)
c. Assertion (A) is true but reason(R) is false
d. Assertion (A) is false but reason(R) is true

Q5. Assertion: calcium and argon are isobars .
. Reason : calcium and argon have the same mass numbers .

Q6. Assertion: the number of valence electrons in oxygen atoms is 6 .

Reason : the valency of oxygen atom is 6

Q7. Assertion: most of the alpha particles in Rutherfords experiment passed straight through the gold foil

Reason : the centre of the atom is positively charged

(C)Answer very briefly

Q9. Give an application of radioactive e isotope ?

Q10. The atomic number of phosphorus is 15. what is the electronic configuration of Of P^{3-} ion ?

Q11. The atom as a whole is electrically neutral was proposed by _____.

SECTION B (3 mark questions)

Q12. Answer as directed

a. Why did Rutherford select a gold foil in his alpha scattering experiment ?
b. Write the name and symbol of the particle chosen by Rutherford for bombardment against the gold foil experiment .

Q13. For an element X , it is given that atomic number = 17 and mass number = 35

a. Write the electronic configuration of the element X .
b. Find the valency .
c. What will be the formula of the compound formed between X and Y having valency 3 ?

Q14. Answer as directed

a. What is isobars ?
b. Atomic number of an element Y is 17.
  i. Write its electronic configuration
  ii. What is the number of valency electrons in Y
  iii. How many electrons are needed to complete the octet of Y
  iv. Is it a metal or a non metal
c. The valency of Na is 1 and not 7 . give reason

Q15. Two metals elements X and Y combine in the ratio of 3 : 8 by mass and the

compound Z is formed , Z is one of the essential components for photosynthesis to take place . If Z is also a green house gas then

a. Identify X , Y and Z
b. Write the electronic configuration of X a nd Y

Q16. State the major drawback in Rutherford's model of the atom . mention two features of Bohr's model that have helped to compensate this drawback .

SECTION C (5 marks)

Q17. Answer as directed

a. Write any two observations that support the fact that atoms are divisible
b. Enlist the conclusions drawn by Rutherford from his alpha scattering experiment
c. Write about Rutherfords model of the atom

Q18. Answer as directed

a. What are isobars . give examples
b. Read the table and answer the questions below

Element	A	B	C	D	E
Mass no.	1	7	14	40	40
Atomic no	1	3	7	18	20

i. Select a pair of isobars from the table
ii. Which two sub- atomic particles are equal in number in neutral atoms