

Name of Student	Class	Subject	Board	Chapter
	9 th	Chemistry	FB	02
Date :	Objective			Teacher Remarks

Section - A

Q. No.1:- Circle the correct option. Each part carries one mark.

01	According to Bohr atomic model:						
A	Each orbit has fixed energy, so each orbit is called sub-energy level	b	The energy of the electron is inversely proportional to its distance from the nucleus	c	Light is absorbed when an electron jumps a lower energy orbit.	d	The farther the electron is from the nucleus, the more energy it has.
02	Chlorine has two isotopes both of which have						
A	Same mass number	b	Same number or neutrons	c	Different number of protons	d	Same number of electrons
03	Number of neutrons in $^{27}_{13}\text{M}$ are:						
A	13	b	14	c	27	d	15
04	Which isotopes is commonly used to irradiate cancer cells/						
A	Iodine 123	b	Carbon 14	c	Cobalt 60	d	Iodine 131
05	M shell has sub shells						
A	1s, 2s	b	2s, 2p	c	3s,3p,3d	d	1s, 2s,3s
06	A sub shell that can accommodate 6 electrons is						
A	S	b	D	c	P	d	F
07	$_{11}\text{Na}$ has electronic configuration						
A	$1s^2 2s^2 3s^1$	b	$1s^2 2s^2 2p^7$	c	$1s^2 2s^2 2p^5 3s^2$	d	$1s^2 2s^2 2p^6 3s^1$
08	Rutherford used _____ particles in his experiments:						
A	He atoms	b	He^+	c	He^{+2}	d	He^{-2}
09	Which of the following statement is not correct about isotopes:						
A	They have same atomic number	b	They have same number of protons	c	They have same chemical properties	d	They have same physical properties
10	Which isotope is used in nuclear reactors:						
A	U-234	b	U-238	c	U-235	d	All of these
11	An element has six electrons in M-shell. Its atomic number is:						
A	14	b	16	c	18	d	8
12	The value of h is _____						
a	$6.626 \times 10^{-34} \text{ Js}$	b	$6.625 \times 10^{-36} \text{ Js}$	c	$6.625 \times 10^{-37} \text{ Js}$	d	$6.625 \times 10^{-35} \text{ Js}$

Name of Student	Class	Subject	Board	Chapter
	9 th	Chemistry	FB	02
Date :	Subjective			Teacher Remarks

Section - B

Q. No.1:- Attempt any eleven parts. The answer of each part should not exceed 3 to 4 lines. (11×3=33).

01	Distinguish between shell and sub-shell.	02	An atom is electrically neutral, why?
03	How many sub-shells are there in N shell?	04	Give notation for sub-shell of M shell?
05	List the sub-shell of M shell in order of increasing energy.	06	Can you identify an atom without knowing number of neutrons in it?
07	Which orbital in each of the following pairs is lower in energy? a. 2s, 2p b. 3p, 2p c. 3s, 4s	08	Draw Bohr's model for the following atoms indicating the location for electron, protons and neutrons: a. Potassium (Atomic No 19, Mass No. 39) b. Silicon (Atomic No. 14 Mass No.28) c. Argon (Atomic No.18 Mass No. 39)
09	How many electrons can be placed in all of the sub-shells in the n=2 shell?	10	Mass number of an atom indicates total number of protons and neutrons in the nucleus. Can you identify an atom without any neutron?
11	What are isotopes? Give two examples.	12	How testing prevailing theories bring about changes in them?
13	How experimental results of some scientists help chemist to formulate new theories and new explanation.	14	

Q. No.4:- Attempt any TWO questions. All questions carry equal marks: (2×10=20)

Q. No.1:- (a).Naturally occurring nitrogen has two isotopes N-14 and N-15 which isotope has greater number of electrons.

(b).Describe the contribution that Rutherford made to the development of the atomic theory.

Q. No2:- (a). Explain how Bohr's atomic theory differed from Rutherford's atomic theory.

(b).Describe the presence of sub shells in a shell.

Q. No.3:- (a).State the importance and uses of isotopes in various fields of life.

(b).The atomic number of an element is 23 and its mass number is 56.

i. how many protons and electrons does an atom of this element have?

ii. How many neutrons does this atom have?