SAMAGRA PLUS

FIRST TERM SAMPLE PRACTICE PAPER

CHEMISTRY

Time : 1 1/2 hour **Score : 40**

Directions:

- **The first 15 minutes is the relaxation time. During this time, you should read the questions carefully and understand them.**
- **Write the answer according to the instructions.**
- **Write the answer considering the score and time of the question.**

Answer any 4 questions from 1 to 5. Each question carries 1 score.

(4 x 1 =4)

1. What is the charge of cathode rays?
   (positive charge, negative charge ,no charge ,sometimes positive and sometimes negative)
2. There are 13 electrons , 13 protons and 14 neutrons in an atom .What is its atomic number?
3. The electron configuration of an element having atomic number 12 is 2,8,-- . To which group does it belong?
4. The electron configuration of an element belonging to 15th group and third period is 2,8,5. Find the atomic number of an element belonging to the same group and the second period
5. Identify the anions from the box

Na^+, Cl^-, Mg^{2+}, O^-, He

- **Answer any 4 questions from 6 to 10. Each question carries 2 score .**

(4 x 2 =8)

6. How was it proved that cathode rays are particles having charge and mass?

7. Draw the orbit electron configuration of boron atom having atomic number 5 and mass number 11.

8.The electron configuration of neon is 2,8.

a) What is its atomic number

b) Find its group number and period number

c) To which period does the element having atomic number one more than that of neon belong?

9. a) State modern periodic law.

b) Who proposed this law?

10. With the help of the table given below, draw the electron dot diagram of the formation of magnesium oxide.

Element	Atomic number	Electron configuration
Magnesium	12	2,8,2
Oxygen	8	2,6

Answer any 4 questions from 11 to 15. Each question carries 3 score.

(4 x 3 =12)

11.The atomic number of element sulphur(S) is 16 . There are 16 neutrons in its nucleus.

a) How many protons and electrons are present in it?

b) Write its electron configuration

c) Write the symbol of the isotope of sulphur having 18 neutrons in its nucleus.

12.Write any three main concepts of Bohr atom model

13.The electron configuration of elements P,Q,R and S are given .(symbols are not real).Write answer to the questions given below with respect to these elements

P- 2,7 Q- 2,8 R – 2,8,1 S- 2,8,7

a) Which of them belong to the same period ?

b) Identify the noble gas

c) Find the group number and period number of the element S

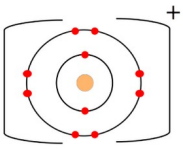
14.There are only two electrons in the outermost shell of the atom of an element belonging to the third period

a) Write its electron configuration

b) To which family does this element belong?

c) Write the electron configuration of the noble gas included in the same period

15.Theorbit electron configuration of sodium ion is illustrated below.



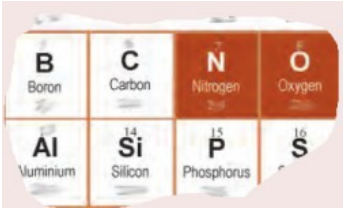
a) Write the electron configuration of sodium atom

b) In which name the energy required to remove an electron from an atom known ?

c) Write the chemical equation of the conversion of sodium atom into its ion .

Answer any 4 questions from 16 to 20. Each question carries 4 scores (4 x 4 =16)

16. A portion of the periodic table is given . The element Phosphorus belongs to 15 the group and third period



a) Write the electron configuration of phosphorus

b) With the help of this configuration find the atomic number of nitrogen

c) Among the elements shown here, which is smaller in size than nitrogen?

d) To which group does boron belong ?

17. a) In what name the elements of group 3 to 12 in the periodic table known?.

b) What is the speciality in electron filling in these elements?

c) From which period ,these elements are seen?

d) Where do the inner transition elements located in the periodic table?

18.Match the following

Contribution	Scientist
Identified the presence of positive charge in substances	Rutherford
Discovered Nucleus	Chadwick
Suggested plum pudding model	Goldstein
Identified the presence of neutral particles innucleus	J J Thomson

19. a) In which name the chemical bond formed by the sharing of electrons known?

b) Classify the type of bond formed in O_2, H_2, N_2 , Hcl molecules into single bond, double bond and triple bond.

c) How is a triple bond formed

20. a) The electronic configuration of two elements are given .(Symbols are not real)

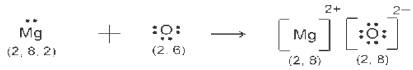
A-2,,1

B- 2,8,1

a) Which of them have larger atom?

b) Find the group and period of these elements.

c) Which are the factors influencing the size of an atom?

No	Key Points	Score	Total
1	Negative charge	1	1
2	13	1	1
3	Second	1	1
4	7	1	1
5	O^{2-}, Cl^- [One answer ½ score, no score for selecting + and - ions]	1	1
6	i Paddle wheel is placed in the path of the cathode rays, it rotates.	1	2
	ii When an electric field is applied on both sides of the rays, they are found to be attracted towards the positive side.	1	
7	Correct figure	2	2
	Partialy drawn	1	
8	a) Atomic number- 10 b)group -18 period -2 c) 3rd period	½ 1 ½	2
9	a) The chemical and physical properties of elements are periodic functions of their atomic numbers. b) Henry Moseley / Moseley	1 1	2
10		2	2
11	a) proton-16, electron-16 b) 2, 8, 6 c) $^{34}_{16}S$	1 1 1	3
12	One concepts	1	3
13	a) P & S b) Q c) period -3 & group 17	1 1 1	3
14	a) 2, 8, 2 b) Alkaline earth metals c) 2, 8, 8	1 1 1	3
15	a) 2, 8, 1 b) Ionisation energy /Ionisation enthalpy. c) $Na \rightarrow Na^+ + 1e^-$	1 1 1	3
16	a) 2, 8, 5 b) 7 c) O / Oxygen d) 13	1 1 1 1	4
17	a) Transition elements b) Filling of electron takes place in the penultimate shell. c) Third Period d) Bottom side inthe periodic table		

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<tr>
<td>19</td>
<td>a) Covalent Bond
b) H_2, HCl – single bond, O_2- double bond, N_2 triple bond
c) Sharing of three pair of electron</td>
<td>1
2
1</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>a) B -2, 8, 1
b) A & B Group 1, A period-2, B period-3
c) •Nuclear charge
•Number of shells</td>
<td>1
2
1</td>
<td>4</td>
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