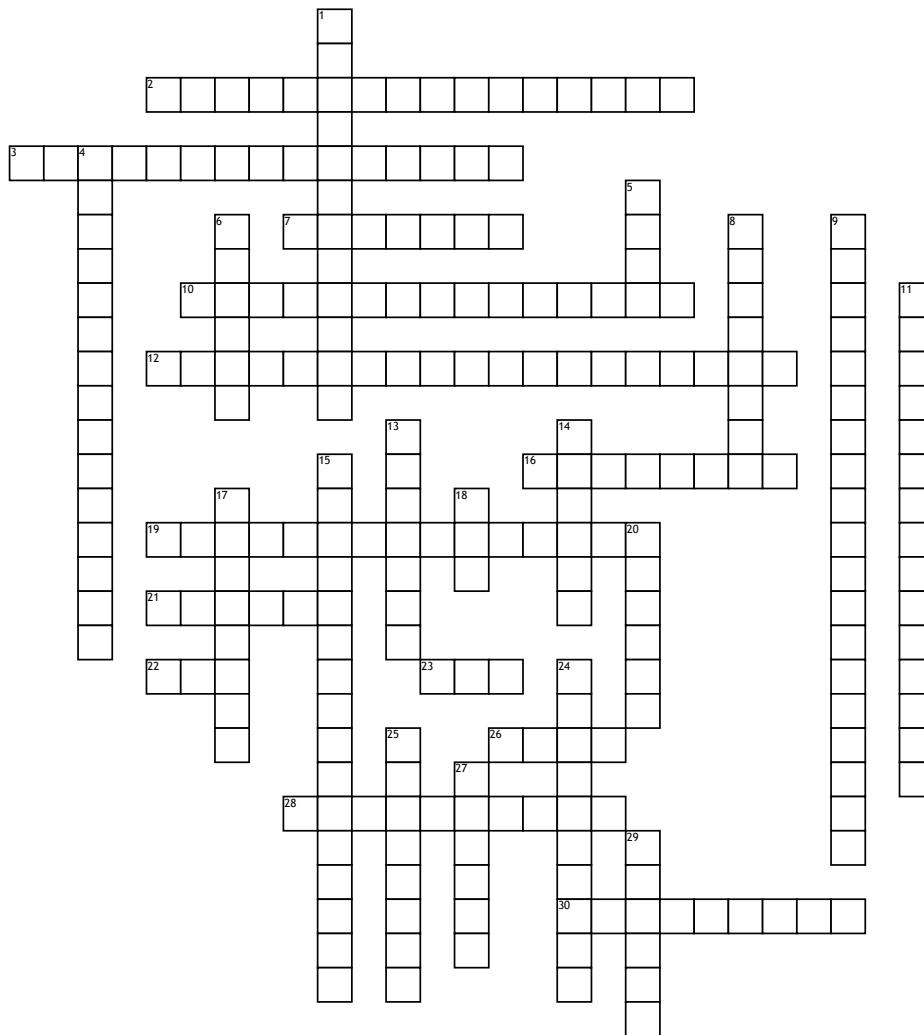


Name: \_\_\_\_\_

Date: \_\_\_\_\_

# Atomic Structure, chemical bonding and Crystal Structure



## Across

2. The ordered arrangement of atoms in a crystalline materials is known as
3. Unit cell with an Atomic Packing Factor of 0.74
7. The electron present in the outermost shell of an atom is known as?
10. The science that examines the arrangements of atoms in solids is known as
12. Relationship between volume of atoms in unit cell and volume of unit cell
16. What happens when two protons or two electrons are placed closed to each other?
19. The process by which the force of attraction between the ions of atoms makes them stick together is known as?
21. A positively charged ion is known as a
22. How many electrons can the first energy level hold?

23. Name of the crystal structure that has 4 atoms in its unit cell

26. Smallest particle of a substance

28. The bond length is the sum of two

30. The property of some chemical elements to exist in two or more different forms is known as

## Down

1. 3D lattice of imaginary lines that connect atoms is known as
4. What is the name of the bonding which occurs when the sharing of valence electrons between two or more atoms
5. The melting point of strongly bonded materials is
6. Chemical element that can have more than one form
8. The difference between attractive and repulsive force is known as
9. Fraction of space occupied by atoms

11. Name of the crystal structure which closed packed direction are cube diagonal
13. The density of the polymers is \_\_\_\_\_ than metals and ceramics
14. A horizontal row of the periodic table is called?
15. Van der Waals forces are also known as
17. The atomic number of an element is determined by the amount of protons and
18. The atom that loses or gains an electron is known as
20. The columns of the periodic table are also known as
24. The mass of an individual atom is known as
25. The smallest unit that has the total symmetry of a crystal is known as
27. Subatomic particle positively charged
29. Elements with same number of valence electrons are located in the periodic table in the same?

## Word Bank

smaller  
Crystal structure  
Repelled  
Period  
ion  
Net force

Valence  
Face Centred Cube  
Proton  
FCC  
Two  
Secondary bonding

ionic radii  
Space lattice  
Unit cell  
Chemical bonding  
High  
Cation

Carbon  
Atomic Packing Factor  
Covalent bonding  
Atomic Packing Factor  
Atomic mass  
Groups

Allotropy  
Neutrons  
Body Centred Cube  
Atom  
Column  
Crystallography