

Winmeen Tnpsc Group 1 & 2 Study Materials

Tnpsc Group 2 Complete Syllabus : <https://goo.gl/fNSnMN>

Tnpsc Group 2 Previous Questions : <https://goo.gl/PYqsd7>

Tnpsc Group 2 Model Questions : <https://goo.gl/xQvyTk>

23. Atomic Structure

1. What is atom?

Atoms are the building blocks of all matter. Atoms are extremely small in size and are expressed in terms of 10^{-10} m (1 Å)

2. What is atom in Greek language?

In Greek language, atom means 'incapability of being cut'.

3. What are the laws of chemical combination?

- Law of Conservation of Mass
- Law of Definite Proportion
- Law of Reciprocal Proportion
- Law of Multiple Proportion and
- Gay Lussac's Law of Combining Volume

4. What is law of definite proportion?

The Law of Definite Proportions can be stated as. "A pure chemical compound prepared by any method consists of the same elements combined together in a fixed proportion by mass".

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5. What is law of conservation of mass?

The Law of Conservation of Mass can be stated thus: “Mass can neither be created nor destroyed during a physical or a chemical change”.

6. What was Dalton`s atomic theory based on?

- Matter is made up of small, indivisible particles called atoms.
- Atoms can neither be created nor destroyed.
- Atoms of the same element are identical in all respects.
- Atoms of different elements are different in all respects.
- Atoms of different elements may combine with each other in a fixed simple whole number ratio to form “compound atoms” (or molecules).
- The atom is the smallest particle of matter that takes part in a chemical reaction.

7. What is atomic electricity?

The first direct experimental evidence to prove the electrical nature of matter came from Michael Faraday. He demonstrated through his experiments that electricity is composed of particles called ‘atoms of electricity’.

8. Who proposed concept on electron?

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It was George Johnstone Stoney, an Irish Physicist, who first proposed the term 'electron' for 'atom of electricity' in 1891. His contribution to research in this area laid the foundations for the eventual discovery of particles by J.J. Thomson in 1897.

9. Who found visible rays travelling between two electrodes?

In 1878, Sir William Crookes, while conducting an experiment using a discharge tube, found certain visible rays travelling between two metal electrodes. These rays are known as Crooke's Rays or Cathode Rays.

10. What is CRT?

The discharge tube used in the experiment is now referred to as Crookes tube or more popularly as Cathode Ray Tube (CRT).

11. What is negative electrode?

The electrode which is connected to the negative terminal of the battery is called the cathode (negative electrode).

12. What is positive electrode?

The electrode connected to the positive terminal is called the anode (positive electrode).

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13. What is florescent material?

When invisible radiation falls on materials like zinc sulphide, they emit a visible light (or glow). This is called fluorescent material.

14. What are the properties of Cathode rays?

- Cathode rays travel in straight lines parallel to each other
- Cathode rays are made up of small particles that have mass and kinetic energy.
- Cathode rays are negatively charged particles
- The direction of deflection indicates that the cathode rays consist of negatively charged particles. These negatively charged particles are called electrons.
- The nature of the cathode rays does not depend on the nature of the gas filled inside the tube or the cathode used.

15. What was the concept of Goldstein?

The presence of positively charged particles in the atom has been precisely predicted by Goldstein based on the conception that the atom being electrically neutral in nature, should necessarily possess positively charged particles to balance the negatively charged electrons.

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16. What is protons?

When hydrogen gas was taken in a discharge tube, the positively charged particles obtained from the hydrogen gas were called PROTONS.

17. What are the properties of Anode Rays?

1. Anode rays travel in straight lines.

2. Since they rotate the light paddle wheel placed in their path, they consist of material particles.

3. Anode rays are deflected by electric and magnetic fields. Since they are deflected towards the negatively charged plate, they consist of positively charged particles.

4. The properties of anode rays depend upon the nature of gas taken in the discharge tube.

5. The mass of the particle is the same as the atomic mass of the gas inside the discharge tube.

18. What is compared to Thomson atomic model?

Thomson's Atomic Model can be compared to a watermelon or a ripened guava. The red edible portion of the watermelon represents the positive sphere. The black

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seeds look like the electrons embedded in an atom. Thomson's scientific model of the atom is popularly known as the 'plum pudding' model.

19. What are the findings of Thomson on atom?

1. An atom consists of a positively charged sphere with electrons embedded in it.
2. The positive and negative charges are equal in magnitude; hence the atom as a whole is electrically neutral.

