



## CHEMISTRY

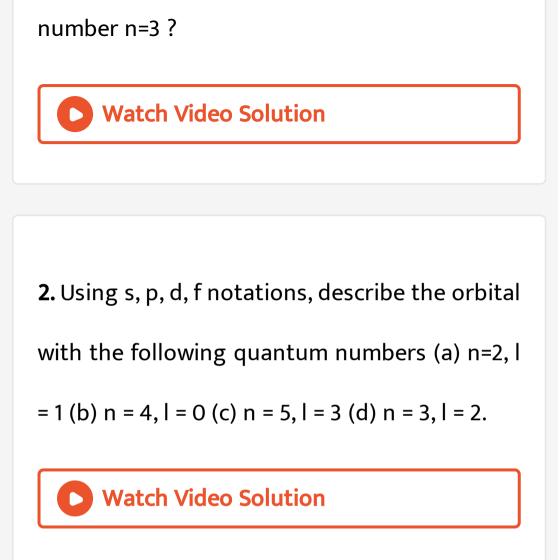
## NCERT - FULL MARKS CHEMISTRY(TAMIL)

## **ATOMIC STRUCTURE-I**



1. What is the total number of orbitals

associated with the principal quantum



Questions A Choose The Best Answer

1. Atomic mass of an element is not necessarily

a whole number because :

A. It contains electrons, protons and neutrons B. It contains allotropic forms no longer considered C. Atoms are indivisible longer considered D. Atoms are no indivisible



2. No two electrons in an atom will have all four quantum numbers equal. The statement is known as

- A. Exclusion principle
- B. Uncertainity principle
- C. Hund's rule
- D. Aufbau principle



**3.** When the 3d orbital is complete, the new electron will enter the

A. 4p orbital

B. 4f orbital

C. 4s orbital

D. 4d orbital



**4.** The preference of three unpaired electrons in the nitrogen atom can be explained by :

A. Pauling's exclusion principle

B. Aufbau principle

C. Uncertainty principle

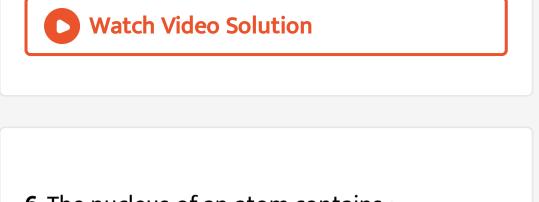
D. Hund's rule



#### 5. The number of orbitals in a p-sub-shell is

- A. 1
- B. 2
- C. 3
- D. 6





- **6.** The nucleus of an atom contains :
  - A. Electrons and protons
  - B. Neutrons and protons
  - C. Electrons, protons and neutrons
  - D. Neutrons and electrons



7. A statement among the following is

A. An atom of hydrogen

B. An electron

C. A neutron

D. A proton

**Answer:** 

8. Which of the following is not a component

of the nucleus?

A. Deuterium

B. Helium

C. Hydrogen

D. Tritium

**Answer:** 

**9.** When the value of the azimuthal quantum number is 3, the magnetic quantum number can have values :

A. +1, -1B. +1, 0, 1C. +2, +1, 0, -1, -2D. +3, +2, +1, 0, -1, -2, -3



10. 2p orbitals have :



**11.** The atomic number of an element is 17 and its mass number is 37. The number of protons, electrons and neutrons present in the neutral atom are :

A. 17, 37,20

B. 20,17,37

C. 17, 17, 20

D. 17, 20,17





# **12.** The maximum number of electrons that can be accommodated in the nth level is :

A.  $n^2$ B. n + 1C. n - 1

 $\mathsf{D.}\,2n^2$ 



13. Principal quantum number determines

A. The distance of the orbital from the nucleus

B. The shape of the orbital

C. The orientation of the orbital in space

D. The spin of the electron

#### **Answer:**

1. Death rate is known as .....

Watch Video Solution

2. When ultraviolet rays incident on metal plate there photoelectric effect does not occur, it occurs by incident of

3. Cathode rays produce .....on the walls of

the discharge tube.



4. The radiations which were not influenced by

a magnet were called.....

**Watch Video Solution** 

5. Neutrons are discovered by .....



**Questions C Write In One Or Two Sentence** 

**1.** What is the charge of an electron, proton and a neutron ?

Watch Video Solution

2. What is atomic number?

3. What is the maximum number of electrons

that an orbital can have?

Watch Video Solution

4. How many orbitals are there in the second

orbit? How are they designated?

5. Sketch the shape of s and p-orbital indicating the angular distribution of electrons



**6.** What are the charge and mass of an electron?

7. Suppose that the uncertainty in determining

the position of an electron in an orbital is 0.6

Å. What is the uncertainty in its momentum?



**8.** What is meant by principal quantum number?

**9.** How many protons and neutrons are present  $in_8^{18}O$ ? **Watch Video Solution** 

10. What are the particles generally present in

the nuclei of atoms?



11. The atomic mass of an element is 24 and its

atomic number is 12. Show how the atom of

the element is constituted?



**12.** What is the principal defect of Bohr atom

model?

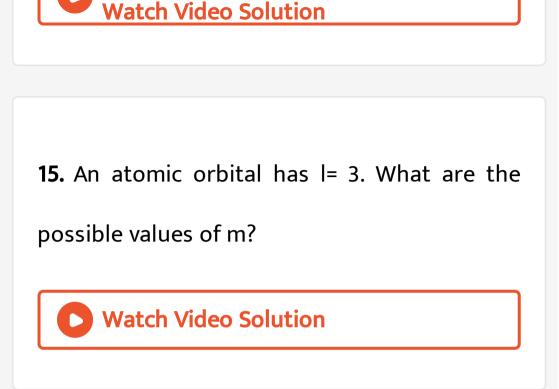
**13.** Write the complete symbol for : (a) The nucleus with atomic number 56 and mass number 138 , (b) The nucleus with atomic number 26 and mass number 55 , (c) The nucleus with atomic number 4 and mass number 9.

Watch Video Solution

14. An atomic orbital has n = 3. What are the

possible values of I ?





#### **16.** Correct electronic configuration of Cr is

17. Which energy level does not have p-orbital?

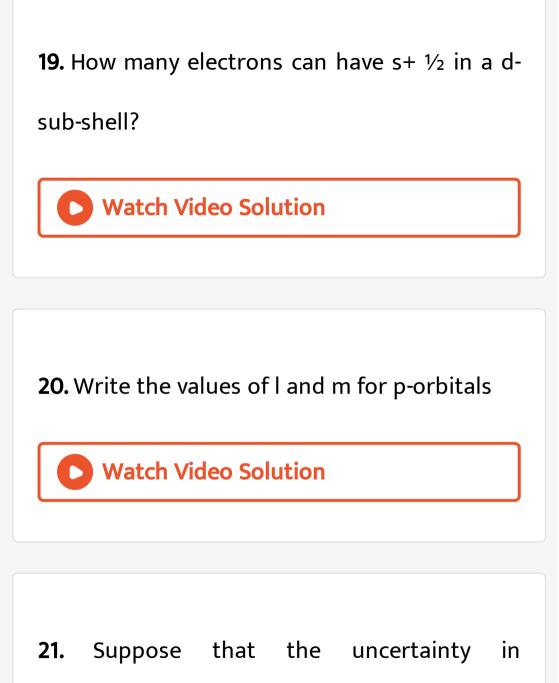


18. An atom of an element has 13 electrons and

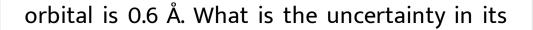
mass number 27. the nucleus of this atom

contains \_\_\_\_\_ neutrons.

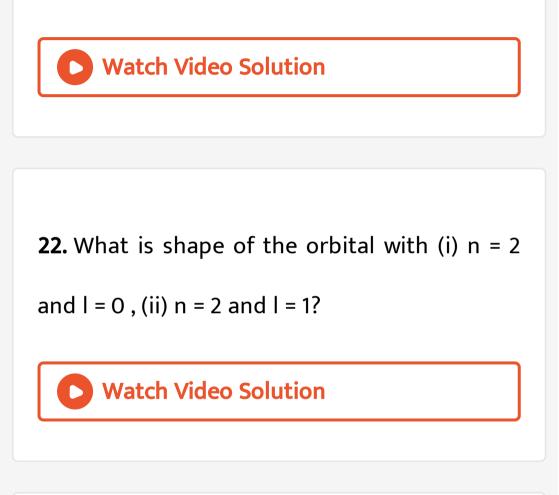




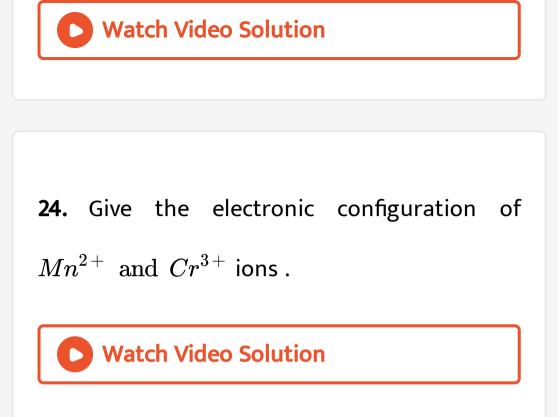
determining the position of an electron in an



momentum?



**23.** Give the values for all quantum numbers for 2p electrons in nitrogen (Z = 7).



**25.** Explain why the electronic configuration of Cr andCu are written as  $3d^5$ ,  $4s^1$  and  $3d^{10}4s^1$ instead of  $3d^44s^2$  and  $3d^94s^2$ ?

#### Questions D Explain Briefly On The Following

**1.** Describe Aufbau principle. Explain its significance in the electronic build up of atoms.

Watch Video Solution

**2.** Using the s, p, d, notation, describe the orbital with the following quantum numbers?

(a) n = 1, l=0, (b) n = 2,l = 0, (c) n = 3, l = 1, (d) n =

#### Watch Video Solution

**3.** Using the a Aufbau principle, write the electronic configuration in the ground state of the following atoms : Boron (Z = 5) Neon (Z = 10) and Aluminium (Z = 13).

4. What is Rutherford's α- ray scattering experiment? What are its conclusions
Watch Video Solution

5. What are the postulates of Bohr theory of

atom?



6. Explain the various quantum numbers which

completely specify the electron of an atom