

|                       |                                     |                        |     |
|-----------------------|-------------------------------------|------------------------|-----|
| <b>CHEMISTRY-11</b>   | <b>Chapter#05 (Complete) Test-5</b> |                        |     |
|                       | Name:                               | Class:                 | ID: |
| Date: / /             | <b>Marks Total: 40</b>              | <b>Marks Obtained:</b> |     |
| Time Allowed: 75 Min. |                                     |                        |     |

Maximum Marks: 08

**(OBJECTIVE TYPE)**

Time Allowed: 10 Min.

**NOTE:** Tick The Correct Option:

- The wave number of the light emitted by a certain source is  $2 \times 10^6 \text{ m}^{-1}$ . The wave length of this light will be:
  - 500 nm
  - 500 m
  - 200 nm
  - $5 \times 10^7 \text{ m}$
- Bohr model of atom is contradicted by:
  - Plank's quantum theory
  - Dual nature of matter
  - Heisenberg's uncertainty principal
  - All of the above
- When fast neutron carries nuclear reaction with nitrogen, it ejects particles:
  - $\alpha$
  - $\beta$
  - $\gamma$
  - $\delta$
- Balmer series, in hydrogen spectrum, lies in spectral region:
  - Ultra violet
  - Visible
  - Infrared
  - Microwave
- The maximum number of electrons in a sub-shell is given by:
  - $2\ell+1$
  - $2\ell-1$
  - $2(2\ell+1)$
  - $2(2\ell-1)$
- Which rays cannot ionize gases?
  - Cathode rays
  - X-rays
  - Neutron beams
  - None
- The amount of energy associated with a quantum of radiation is inversely proportional to:
  - Wavelength
  - Wave number
  - Frequency
  - Both 'a' & 'b'
- Which has greater  $\Delta E$  value?
  - $E_2 - E_1$
  - $E_3 - E_2$
  - $E_4 - E_3$
  - $E_7 - E_1$

Maximum Marks: 32

**(SUBJECTIVE TYPE)**

Time Allowed: 65 Min.

**SECTION-I**

**Q.2: Give brief answers to the following questions: (20)**

- How was it inferred that cathode rays are material particles?
- The  $e/m$  value of positive rays for different gases is different but for cathode rays remains the same. Explain.
- How are slow neutrons more effective than fast neutrons? OR Write nuclear reactions involving conversion of Cu to Zn.
- How do you come to know that the velocities of electrons in higher orbits are less than those in lower orbits?
- What is de-Broglie's equation? What is its importance?
- Why can the position and momentum of electron not be calculated precisely?
- Why are p-orbitals called triply fold degenerate orbitals?
- Define nodal plane.
- What is Hund's rule?
- Distribute electrons in orbitals of  ${}_{29}\text{Cu}$  and  ${}_{29}\text{Fe}$ .

**SECTION-II**

**NOTE:** Attempt All Questions:

(12)

**Q.3: Explain Rutherford's Model of Atom. Give its defects.**

**Q.4: What is spectrum? Explain atomic emission and atomic absorption spectrum.**

**Q.5: What are X-rays? Give the conclusions drawn by Moseley from the study of X-ray spectra.**

