

SSR DEGREE COLLEGE (AUTONOMOUS) NIZAMABAD
SEM – II INTERNAL – II
Chemistry
Question bank

I. Multiple Choice

1. The unit of molar conductivity is

- A) $\text{S cm}^2 \text{ mol}^{-1}$ ✓
- B) ohm cm
- C) S cm^{-1}
- D) ohm

2. Conductivity of a solution decreases with dilution because

- A) ions increase
- B) ions decrease per unit volume ✓
- C) viscosity decreases
- D) temperature increases

3. Faraday constant value is

- A) 96500 C/mol ✓
- B) 1.6×10^{-19}
- C) 8.314
- D) 22.4

4. Oxidation is

- A) gain of electrons
- B) loss of electrons ✓
- C) gain of proton
- D) loss of proton

5. In electrolysis, cathode is

- A) positive electrode
- B) negative electrode ✓
- C) neutral
- D) electrolyte

6. Bond order is calculated as

- A) $N_b + N_a$
- B) $(N_b - N_a)/2$ ✓
- C) $N_b \times N_a$
- D) N_b/N_a

7. Bond order of O_2 is

- A) 1
- B) 2 ✓
- C) 3
- D) 0

8. O_2 is paramagnetic because

- A) paired electrons
- B) unpaired electrons present ✓
- C) no electrons
- D) ionic bond

9. Bond order of N_2 is

- A) 1
- B) 2
- C) 3 ✓
- D) 4

10. If bond order is zero, molecule is

- A) stable
- B) unstable ✓
- C) ionic
- D) polar

11. Elevation in boiling point depends on

- A) nature of solute
- B) number of particles ✓
- C) temperature only
- D) pressure only

12. Van't Hoff factor is

- A) $i = \text{observed/normal molar mass}$
- B) $i = \text{actual particles/expected particles}$ ✓
- C) $i = \text{pressure/temp}$
- D) $i = \text{volume/mass}$

13. Freezing point decreases when

- A) solute added ✓
- B) solvent added
- C) temperature increased
- D) pressure decreased

14. Osmotic pressure formula is

- A) $\pi = MRT$ ✓
- B) $PV = nRT$
- C) $E = mc^2$
- D) $V = IR$

15. Colligative properties depend on
A) chemical nature
B) number of solute particles ✓
C) color
D) shape
16. Strong electrolytes show
A) low conductivity
B) high conductivity ✓
C) no conductivity
D) variable
17. Which is paramagnetic?
A) N₂
B) O₂ ✓
C) H₂
D) He
18. Increase in dilution increases molar conductivity due to
A) ion pairing
B) ion separation ✓
C) pressure
D) temperature
19. Depression in freezing point is proportional to
A) molality ✓
B) molarity
C) normality
D) density
20. Cathode reaction is
A) oxidation
B) reduction ✓
C) neutralization
D) hydrolysis

II. Fill in the Blanks

- Oxidation is _____ of electrons. → **loss**
- Reduction is _____ of electrons. → **gain**
- Unit of conductivity is _____. → **S cm⁻¹**
- Faraday constant is _____ C/mol. → **96500**
- Cathode is _____ electrode. → **negative**

- Bond order formula is _____. → **(N_b - N_a)/2**
- O₂ has _____ bond order. → **2**
- N₂ has _____ bond order. → **3**
- Paramagnetism is due to _____ electrons. → **unpaired**
- If bond order is zero, molecule is _____. → **unstable**

11. Boiling point elevation depends on _____ of solute particles. → **number**
12. Freezing point _____ when solute is added. → **decreases**
13. Osmotic pressure is denoted by _____. → π
14. Formula of osmotic pressure is _____. → $\pi = MRT$
15. Van't Hoff factor is represented by _____. → **i**
16. Strong electrolytes _____ completely. → **dissociate**
17. Conductivity increases with _____. → **temperature**
18. Colligative properties depend on _____ not nature. → **number**
19. O₂ is _____ (magnetic property). → **paramagnetic**
20. Electrolysis involves _____ reaction. → **redo**

III. Descriptive Questions

1. Kohlrausch law and its applications
2. Debye-Hückel theory
3. MOED of N₂ and CO molecule
4. Emulsions and Gels