T.Y.B.SC. SEMESTER- III

CHEMISTRY PAPER – II  CH – 332 (INORGANIC CHEMISTRY)

MULTIPLE CHOICE QUESTIONS (MCQ)

CHAPTER 1. MOLECULAR ORBITAL THEORY

Q1) Choose the correct option from following and write in right side box   1 Mark

1) What is stabilization energy of H$_2^+$ ion

Ans  a) $-\beta$   b) $-2\beta$   c) $-3\beta$   d) $-4\beta$

2) Write the stabilization energy of Be$_2$ molecule

Ans  a) $-\beta$   b) $-2\beta$   c) $-3\beta$   d) $-4\beta$

3) What is bond order of B$_2$ molecule on the basis of MOT?

Ans  a) 2   b) 1   c) 1.5   d) 2.5

4) Give LCAO equation

Ans  a) $\Psi = \phi_1 \pm \lambda \phi_2$   b) $\Psi = \phi_1 \pm \phi_2$

 c) $\Psi = \phi_1 \pm \lambda \phi_1$   d) other than above

5) Give the symmetry symbol for dxy, dyz and dxz orbitals.
6) What is bond order of F₂ molecule?
Ans  a) 2  b) 1  c) 1.5  d) 2.5

7) What is stabilization energy of N₂ molecule
Ans  a) -2β  b) -6β  c) -3β  d) -4β

8) What is stabilization energy of C₂ molecule
Ans  a) -2β  b) -6β  c) -3β  d) -4β

9) Write molecular orbital electronic configuration of Li₂ molecule
Ans  1) KK (σ2s)², (σ*2s)⁰  2) KK (σ2s)², (σ*2s)¹
   3) KK (σ2s)², (σ*2s)²  4) none of the above

10) What is bond order of C₂ molecule
Ans  a) 2  b) 1  c) 1.5  d) 2.5

11) What is the magnetic nature of NO⁺ ion molecule?
Ans  a) Diamagnetic b) Paramagnetic  c) Ferromagnetic  d) None of three

12) What is the magnetic nature of C₂ molecule?
Ans  a) Diamagnetic b) Paramagnetic  c) Ferromagnetic  d) None of three

13) Write M. O. electron configuration of B₂ molecule
Ans  a) KK(σ2s)², (σ*2s)², (π2py)¹,(π2pz)¹
   b) KK(σ2s)², (σ*2s)², (π2py)²,(π2pz)¹
   c) KK(σ2s)², (σ*2s)², (π2py)¹,(π2pz)²
   d) other than three

14) What is the magnetic nature of H₂⁺ ion?
Ans  a) Diamagnetic b) Paramagnetic  c) Ferromagnetic  d) None of three
15) Give the symmetry symbol for s orbitals.

Ans  a) $t_1u$  b) $a_1g$  c) $e_g$  d) $t_2g$

16) Ne$_2$ molecule does not exist. Why?

Ans  a) Stabilization energy zero
b) Bond order is zero
c) both the above

17) Out of the following which molecule is not in existence?

Ans  a) Be$_2$  b) B$_2$  c) N$_2$  d) O$_2$

18) Out of the following which molecule is in existence and have highest stability?

Ans  a) B$_2$  b) N$_2$  c) Ne$_2$  d) He$_2$

19) Bonding molecular Orbitals have features like------

Ans  a) Obtained by addition of wave Function of AOs.
b) lower energy than that of combining AOs.
c) It is stable orbital
d) All the three above

20) What is Bond order of NO molecule

Ans  a) 2  b) 1  c) 1.5  d) 2.5