

LEADER

RACE - 10

page - ①

1. ANS - C

In halogen (X_2)

HOMO : $\pi_{2p_x}^* = \pi_{2p_y}^*$

LUMO : $\pi_{2p_z}^*$

2. ANS - C

If internuclear axis is x -axis.

Then

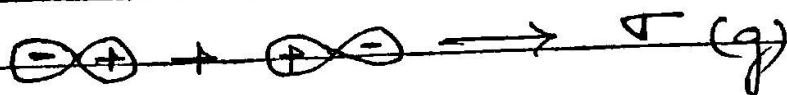
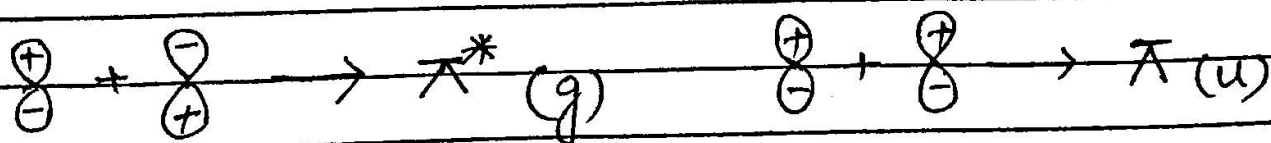
$s - p_x$ σ MO

$p_x - p_y$ NBMO

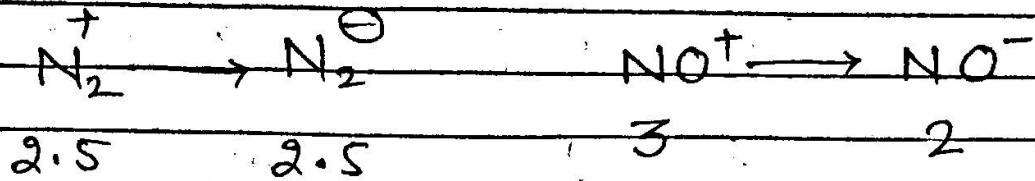
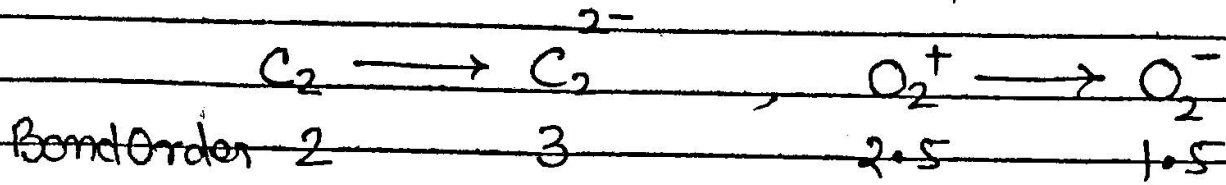
$p_z - p_z$ π MO

$p_x - p_x$ σ MO

3. ANS - C



4 Ans - A, B, D



5 Ans - B, C, D

NO^+ diamagnetic

O_2^- , NO^- , O_3 paramagnetic

6 Ans - A, B, C, D

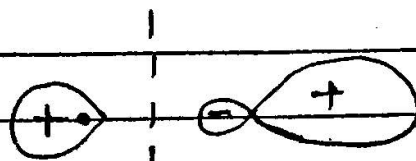
$$9f \quad N_B > N_A$$

Option - (A) : may be paramagnetic or diamagnetic

Option (B) : zero value is not possible.

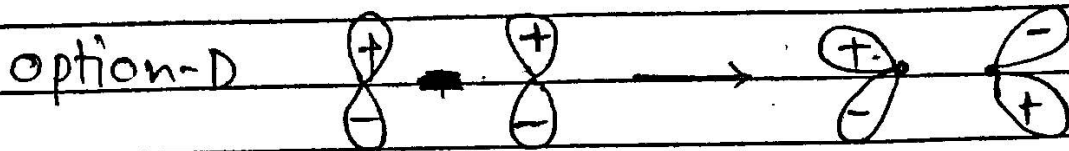
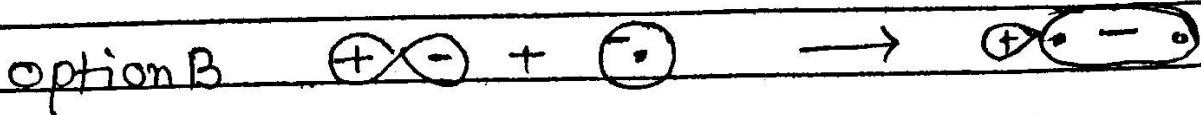
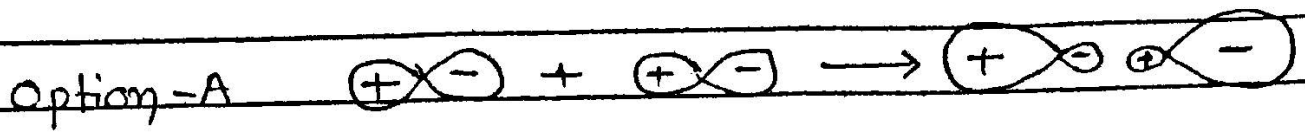
7 Ans - B

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 ∇sp



← Nodal plane

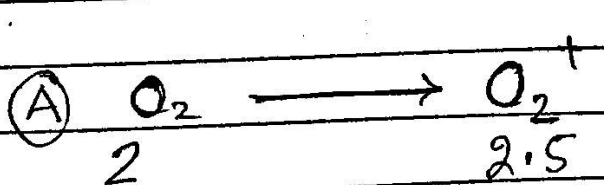
8 - ANS - C



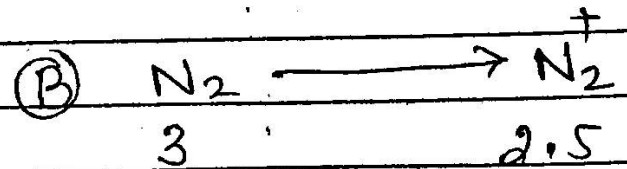
9 - ANS - B

Bonding molecular orbitals have greater electron density between the two nuclei.

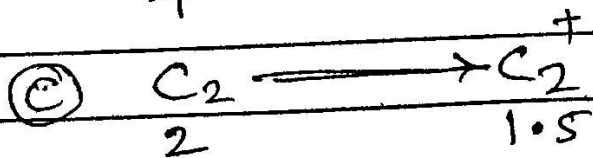
10 - ANS A-P, R, B-R, S C-Q, R, S D-P



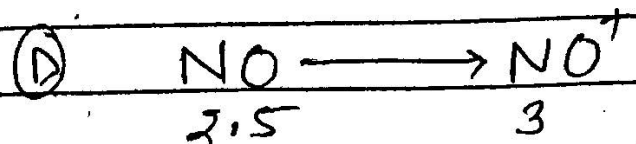
e^- removed from $\pi_{2p}^* MO$



e^- removed from $\pi_{2p} MO$



e^- removed from $\pi_{2p} MO$



e^- removed from $\pi_{2p}^* MO$

11 ANS - 12.5 2- N_2^+ NO^+ CO
 C_2 O_2 2.5 3 3
BO. 3 1 2.5 3 3