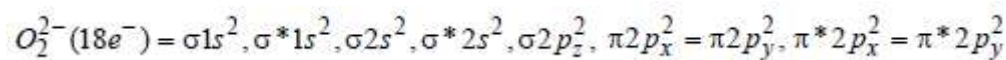
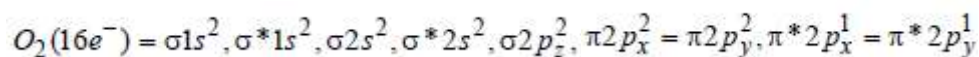
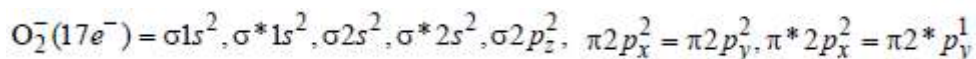


61. (1) Molecular orbital electronic configuration of these species are :



Hence number of antibonding electrons are 7, 6 and 8 respectively.

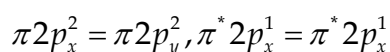
62. (3)

63. (4) $\sigma_b^2 \sigma_a^* \sigma_b^2 \sigma_a^* (\pi_b^2 = \pi_a^2) \sigma_b^1$ ($N_2^+ = 13$ electrons)

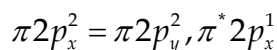
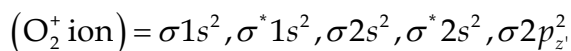
it contains one unpaired electron hence paramagnetic.

64. (2)

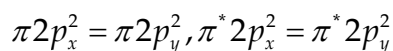
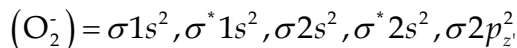
65. (2) (O_2) = $\sigma 1s^2, \sigma^* 1s^2, \sigma 2s^2, \sigma^* 2s^2, \sigma 2p_z^2,$



$$\text{Bond order} = \frac{N_b - N_0}{2} = \frac{10 - 6}{2} = \frac{4}{2} = 2$$



$$\text{Bond order} = \frac{N_b - N_0}{2} = \frac{10 - 5}{2} = \frac{5}{2} = 2\frac{1}{2}$$



$$\text{Bond order} = \frac{N_b - N_0}{2} = \frac{10 - 8}{2} = \frac{2}{2} = 1$$

66. (1)

67. (1)

68. (2)

69. (2)

70. (3)