Answers of Objective Questions Prepared by: Dr. Y.S. Yadav

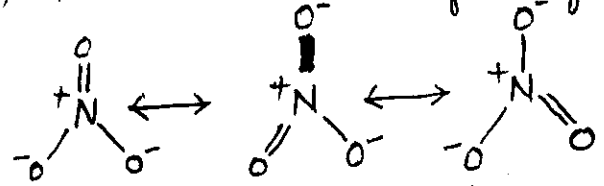
(1). (a) HCl does not undergo hydrogen bonding & its bp is not affected by H-bonding.

(2) (d) Diethyl ether does not contain a H-atom attached to O and hence does not undergo H-bonding

[3] (c) $\angle FFF = 120.1^\circ$ Hence option (c) is correct

[4] (c) Only atomic orbitals of comparable energy and proper orientation can combine to form two molecular orbitals.

[5] (d) Nitrate ion has the following three resonating structures:



As is evident, three O-atoms are attached to the N-atom by four bonds, therefore, bond order of N—O bond is $4/3 = 1.33$

[6] (d) Although H_2^+ and H_2^- have the same bond order, H_2^- has longer bond length than H_2^+ because of the presence of one electron in the anti-bonding orbital which repels the two H-atoms from coming close.

[7] (b)

[8] (a)

[9] (b)

[10] (b) $r_{Na^+}/r_{Cl^-} = \frac{95}{181} = 0.52$ which lies in the range of $= 0.414 - 0.73$

Hence Coordination no. of $Na^+ = 6$

[11] (d) $2d\sin\theta = n\lambda$ or $2 \times d \times \sin 60 = 2 \times 1A^\circ$ or $2 \times d \times 0.8660 = 2$ $(\because \sin 60 = \frac{\sqrt{3}}{2} = 0.8660)$

or $d = 1.15A^\circ$

[12] (a)

[13] (b)

[14] (a) Because AgCl will be precipitated.

[15] (c)

[16] (a)

[17] (b)

[18] (a)

19 (a) T (b) F (c) T (d) T

20 (b)

21 (b)

22 (c)

23 (d)

24 (c)

25 (c)

26 (d)

27 (d)

28 (a)

29 (d)

30 (a)

31 (b) E (d) Z

32 (b)

33 (a)

34 (d)

35 (a)

36 (c) The least stable carbanion is the strongest nucleophile

37 (d) Since electron withdrawing $-NO_2$ group stabilizes the carbanion by dispersal of the -ve charge

38 (b)

39 (a)

40 (a)

41 (d)

42 (d)

43 (c)

44 (a)

45 (b)

46 (c)

47 (d)

48 (c)

49 (b)

50 (d)

51 (b)

52 (a)

53 (b)

54 (a)

55 (b)

56 (a)

57 (b)

58 (a)

59 (c)

60 (d)