## CHEMISTRY

71. (4)

$2\left(r_{Na^+} + r_{Cl^-}\right) = a$

$r_{Na} + r_{Cl^-} = \frac{a}{2} = \frac{552}{2} = 276$ pm

$r_{Cl^-} = 276 - r_{Na^+}$

$= 276 - 95 = 181$ pm

72. (1)

KBr will have fcc structure with co-ordination no 6 : 6

$\because \frac{r^+}{r^-} = \frac{254}{400} = 0.635$ falls in the range

0.414 – 0.732.

73. (3)

$\frac{r^+}{r^-} = 0.225 - 0.414$

$f_B$ co-ordination number 4

Hence, $r^- = \frac{22.5}{0.225} = 100$ pm

74. (3)

Number of atoms in 4 g of

$X = \frac{4}{40} \times N_A = 0.1N_A$

Since bcc crystal has 2 atoms per unit cell,

Number of unit cell

75. (1)

In HCP, 74% of the available space is occupied.

76. (1)

77. (3)

78. (3)

Silicon exists as network solid (covalent solid)

79. (1)

$MnO_2$ = Antiferromagnetic

$TiO_2$ = Diamagnetic

$VO_2$ = Paramagnetic

$CrO_2$ = Ferromagnetic

80. (1)

$\frac{V_1}{V_2} = \frac{T_1}{T_2} \because V_2 = \frac{T_2}{T_1} V_1$

$= \frac{546^\circ K}{273^\circ K} \times 0.2 \text{ L} = 0.4 \text{ L}.$



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