# Prabhat Academy Ashtbhuja Nagar, Pratapgarh

## Half-Yearly Examination (2019-20)

## Class : 11th

## Sub. : Chemistry

**Time: 2.30** **M.M. : 100**

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Q.1- (A) MCQ'S. [10]

(a) Which of the following is the smallest in size?

(i) $N^{3-}$ (ii) $O^{2-}$ (iii) $F^{-}$ (iv) $Na^{+}$

(b) Lanthanides and actinides belong to which periods of periodic table?

(i) 3, 4 (ii) 4, 3 (iii) 6, 7 (iv) 7, 6

(c) Hydrogen bond is not present in:

(i) ice. (ii) $CH_3$ COOH. (iii) $C_2$ $H_5$ OH. (iv) $CHCl_3$.

(d) O2one has:

(i) 16 and 2 $\pi$ (ii) 26 & 2 $\pi$ (iii) 26 and 1 $\pi$ (iv) 26, 1 $\pi$ and a lone pair. Of electrons.

(e) Totale no. of orbitals associated with $3^{rd}$ shell will be.

(i) 2 (ii) 4 (iii) 9 (iv) 3.

Q.2- One word answer: [15]

(i) Which fundamental particle is responsible for making various isotopes of an element?

(ii) Which types of spectrum given by hydrogen?

(iii) What is Rydberg formula?

(iv) Name last member of 3 d - series.

(v) What is the Hybridization in $CH_4$.

Q.3- Given answer of following questions: [15]

(i) What is total no. of sigma and $\pi$ bounds in following compounds.

(a) $C_2$ $H_2$ (b) $C_2$ $H_4$.

(ii) Which hybrid orbitals are used by carbon atoms in following medculas?

(a) $CH_3$ - $CH_3$ (ii) $CH_3$ - CH = $CH_2$

(iii) Calculate bond order of fallowings:

(a) $N_2$ (b) $O_2$

(iv) What do you mean by $SP^3$ hybridization?

(v) What is the limitation of valence bond theory?

Q.4 - Give the answer's of following's: [25]

(i) Afbau's Principal (ii) de - Broglie eq's (iii) Quanturn no. (iv) Dative Bond.

Q.5- Give the resonance structure of fallowing's [5]

(i) Carbon dioxide (ii) Nitrate ion

Q.6- What do you mean by Born Haber cycle: [5]

Q.7- What is periodic position of Ca, Sc in modern periodic table. ( At. no., $_{21}$SC and $_{20}$Ca). [5]

Q.8- Explain black body Radiation. [5]

Q.9- Calculate the mass of $Na_2 CO_3$ which will have the same no. of molecules as contained in 12.3 gm of $Mg SO_4 7H_2 O$.

Q.10- Give the electronic configuration's of following's: [5]

(i) $Cl^-$ (ii) $F_e^{3+}$.

Q.11- What do you mean by formation of $PCl_5$. [5]