

Class : XIth
Date :

Subject : CHEMISTRY
DPP No. : 5

Topic :- Classification of Elements & Periodicity in Properties

- Resonance is not shown by:

a) C ₆ H ₆	b) CO ₂	c) CO ₃ ²⁻	d) SiO ₂
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- The hybridization of P in PO₄³⁻ is same as in:

a) I in ICl ₄ ⁻	b) S in SO ₃	c) N in NO ₃ ⁻	d) S in SO ₄ ²⁻
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- Dipole moment is highest for:

a) CHCl ₃	b) CH ₄	c) CHF ₃	d) CCl ₄
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- What is the correct decreasing order of ionic radii of following ions? N³⁻, O²⁻, F⁻, Na⁺, Mg²⁺

a) N ³⁻ > O ²⁻ > F ⁻ > Mg ²⁺ > Na ⁺	b) N ³⁻ > O ²⁻ > F ⁻ > Na ⁺ > Mg ²⁺
c) N ³⁻ > O ²⁻ > Mg ²⁺ > Na ⁺ > F ⁻	d) Na ⁺ > F ⁻ > O ²⁻ > Mg ²⁺ > N ³⁻
- In which of the following crystals of ionic compounds would you expect maximum distance between the centres of cations and anions

a) LiF	b) CsF	c) CsI	d) LiI
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- Which of the following has lowest bond angle?

a) BeF ₂	b) H ₂ O	c) NH ₃	d) CH ₄
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- The state of hybridization of C₂, C₃, C₅ and C₆ of the hydrocarbon,

$$\begin{array}{ccccccc}
 & \text{CH}_3 & & & \text{CH}_3 & & \\
 & | & & & | & & \\
 \text{CH}_3 - & \text{C} & - & \text{CH} = & \text{CH} - & \text{C} & - & \text{C} \equiv \text{CH} \\
 & | & & & | & & & | \\
 & \text{CH}_3 & & & & & & \text{H} \\
 & 7 & & & 6 & & & 5 & 4 & & 3 & 2 & 1
 \end{array}$$

Is in the following sequence:

a) sp, sp ² , sp ³ and sp ²	b) sp, sp ³ , sp ² and sp ³	c) sp ³ , sp ² , sp ² and sp	d) sp, sp ² , sp ² and sp ³
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- Among the following elements Ca, Mg, P and Cl the order of increasing atomic radius is:

a) Mg < Ca < Cl < P	b) Cl < P < Mg < Ca	c) P < Cl < Ca < Mg	d) Ca < Mg < P < Cl
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9. Alkali metals in each period have:
- Largest size
 - Lowest IE
 - Highest IE
 - Highest electronegativity
10. The critical temperature of water is higher than that of O_2 because H_2O molecules has:
- Fewer electrons than O_2
 - Two covalent bonds
 - V-shape
 - Dipole moment
11. For diatomic species are listed below. Identify the correct order in which the bond order is increasing in them:
- $NO < O_2^- < C_2^{2-} < He_2^+$
 - $O_2^- < NO < C_2^{2-} < He_2^+$
 - $C_2^{2-} < He_2^+ < O_2^- < NO$
 - $He_2^+ < O_2^- < NO < C_2^{2-}$
12. Which of the following is least ionic?
- CaF_2
 - $CaBr_2$
 - CaI_2
 - $CaCl_2$
13. The bond order of individual carbon-carbon bonds in benzene is:
- One
 - Two
 - Between 1 and 2
 - One and two alternately
14. The total number of valency electrons in PH_4^+ ion is:
- 8
 - 9
 - 6
 - 14
15. Pauling's equation for determining the electronegativity of an element, is
 X_A, X_B = electronegativity values of elements A and B
 Δ = represents polarity of $A - B$ bond
- $X_A - X_B = 0.208\sqrt{\Delta}$
 - $X_A + X_B = 0.208\sqrt{\Delta}$
 - $X_A - X_B = 0.208\Delta^2$
 - $X_A - X_B = \sqrt{\Delta}$
16. The set representing the correct order of ionic radius is:
- $Na^+ > Li^+ > Mg^{2+} > Be^{2+}$
 - $Li^+ > Na^+ > Mg^{2+} > Be^{2+}$
 - $Mg^{2+} > Be^{2+} > Li^+ > Na^+$
 - $Li^+ > Be^{2+} > Na^+ > Mg^{2+}$

17. The pair having similar geometry is :
a) BF_3, NH_3 b) $\text{BF}_3, \text{AlF}_3$ c) $\text{BeF}_2, \text{H}_2\text{O}$ d) $\text{BCl}_3, \text{PCl}_3$
18. The attraction that non-polar molecules have for each other is primarily caused by:
a) Hydrogen bonding
b) Difference in electronegativities
c) High ionisation energy
d) Van der Waals' forces
19. The structure of ICl_2^- is:
a) Trigonal
b) Octahedral
c) Square planar
d) Distorted trigonal bipyramid
20. The correct order of increasing oxidising power is
a) $\text{F}_2 < \text{Cl}_2 < \text{I}_2 > \text{Br}_2$ b) $\text{F}_2 < \text{Br}_2 < \text{Cl}_2 < \text{I}_2$ c) $\text{Cl}_2 < \text{Br}_2 < \text{F}_2 < \text{I}_2$ d) $\text{I}_2 < \text{Br}_2 < \text{Cl}_2 < \text{F}_2$

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