CLASS – XI

SUBJECT : CHEMISTRY

MONTH : OCTOBER 2024

QUES NO	TYPE OF QUESTION (REASONING / MCQ / MATRIX / GRID / OTHER)	QUESTION	OPTION PROVIDED	CORRECT OPTION	EXPLANATION	% OF STUDENTS ATTEMPTED CORRECTLY
01	**MCQ**	Maximum bond angle is present in case of:	(i) BBr_3 (ii) BCl_3 (iii) BF_3 (iv) Same in all	**(iv)**	All are trigonal bipyramidal	
02	**MCQ**	Which of the following is not a correct statement?	(i) Every molecule with 5 electron pairs always has square pyramid structure (ii) Multiple bonds are always shorter than corresponding single bonds (iii) The electron-deficient molecules can act as Lewis acids (iv) The canonical structures have no real existence	**(i)**	The shape of molecule does not depend on all electron pairs, it depends on combination of no. of bond pairs and lone pairs	
03	**MCQ**	Which of the following substances has a dipole moment more than zero?	(i) Carbon dioxide (ii) Water (iii) Methane (iv) Nitrogen	**(ii)**	The water molecule is dissymmetric but others are symmetric	
04	**Matching type**	Match list-I and list-II and pick out correct matching codes from the given choices. List-I (Compound): A. ClF_3 List-II (Structure): 1. Square planar	(i) A-5, B-4, C-3, D-2, E-1 (ii) A-4, B-4, C-3, D-1, E-2 (iii) A-5, B-3, C-4, D-2, E-1 (iv) A-3, B-4, C-1, D-5, E-2	**(iii)**	Refer VSEPRT in NCERT Text book	

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<tr><td>B. PCl_5</td><td>2. Tetrahedral</td></tr>
<tr><td>C. IF_5</td><td>3. Trigonal bipyramidal</td></tr>
<tr><td>D. CCl_4</td><td>4. Square pyramidal</td></tr>
<tr><td>E. XeF_4</td><td>5. Bent T-Shaped</td></tr>
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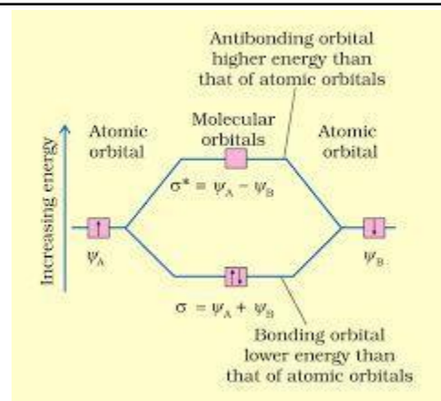
<td>05</td>
<td>MCQ</td>
<td>Which one of the following statements is correct?</td>
<td>(i) BMO is lowered by the same amount of energy by which ABMO is raised
(ii) BMO is lowered by the greater amount of energy than the amount by which ABMO is raised
(iii) BMO is lowered by the less amount of energy than the amount by which ABMO is raised
(iv) Anyone of the above is possible</td>
<td>(iii)</td>
<td> 
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<td>06</td>
<td>MCQ</td>
<td>Q1. Match the following
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<tr><td>Coloumn I</td><td>Coloumn II</td></tr>
<tr><td>i.) Entropy of vapourisation</td><td>a) decreases</td></tr>
<tr><td>ii) K for spontaneous process</td><td>b) Is always positive</td></tr>
<tr><td>iii) Crystalline solid state</td><td>c) Lowest entropy</td></tr>
<tr><td>iv) ΔU in adiabatic expansion in ideal gas</td><td>d) $\Delta H_{vap} / T_b$</td></tr>
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<td>a. i) - b , d ; ii) - b ; iii) - c ; iv) - a
b. i) - b , a; ii) - b ; iii) - d ; iv) - a
c. i) - b , d ; ii) - a ; iii) - c ; iv) - b</td>
<td>A</td>
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			d. i) - b , c ; ii) - c ; iii) - b ; iv) - a			
07	**MCQ**	Which of the following processes is a non-spontaneous process?	a. Dissolution of salt or sugar in water b. Mixing of different gases through diffusion c. Precipitation of copper when zinc rod is dipped in aqueous solution of copper sulphate. d. Flow of heat from a cold body to a hot body.	D	Non- Spontaneous reactions are those chemical reactions that require an energy input to proceed or that cannot take place without the influence of external factors. It requires energy input to proceed.	
08	**MCQ**	When 1 M H_2SO_4 is completely neutralised by sodium hydroxide, the heat liberated is 114.64 kJ. What is the enthalpy of neutralisation?	a. +114.64 kJ b. -114.64kJ c. -57.32kJ d. . +57.32kJ	**c**	1 mol H_2SO_4 requires 2 mol NaOH for neutralisation. As heat of neutralisation is heat evolved for 1 mole of H+ ions, therefore enthalpy of neutralisation = -114.64kJ / 2 = -57.32kJ	
09	**A & R**	Assertion : Enthalpy of formation of graphite is zero but of diamond it is not zero. Reason : Enthalpy of formation of the most stable allotrope is taken as zero.	a. Both A and R are true and R is the correct explanation of A b. Both A and R are true but R is not the correct explanation of A.	**a**	A pure element in its standard state has a standard enthalpy of formation which is equal to zero. Graphite is the elementary substance, so standard enthalpy of formation is zero. Hence, both Assertion and Reason are correct and Reason is the correct explanation for Assertion	

			c. A is true but R is false. d. A is false but R is true			
10	**MCQ**	Which of the following condition is not favourable for the feasibility of a reaction?	a. ΔH = +ve, TΔS = +ve and TΔS >ΔH b. ΔH = -ve, TΔS = +ve c. ΔH = -ve, TΔS = -ve and TΔS <ΔH d. ΔH = +ve, TΔS = +ve and TΔS <ΔH	d	For a reaction to be feasible, ΔG has to be negative.	