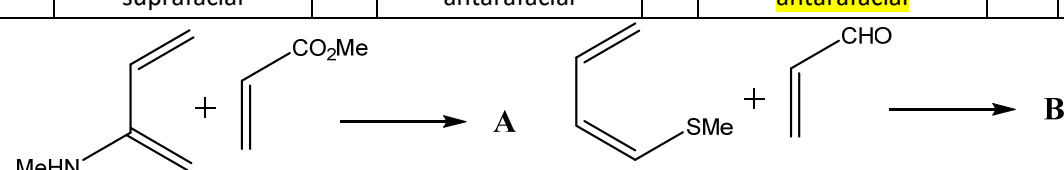
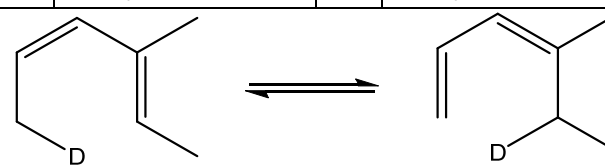


Admn. No:			Section:			Name:		
Instructions: (i) Answer all the questions by ticking (v) the appropriate box. (ii) Use pen only. Points will not be given if pencil is used. (iii) Cutting and overwriting will not fetch any mark.								
1	The number of M-M bonds in the compound $[(\mu\text{-CH}_2)\text{Os}_3(\text{CO})_{10}]$ is _____							
	A	2	B	3	C	4	D	5
2	Arrange the following in the order of increasing IR Stretching frequency of CO. i) $[\text{Mn}(\text{CO})_5]^-$, ii) $[\text{Cr}(\text{CO})_6]$, iii) $[\text{Re}(\text{CO})_5(\text{PPh}_3)]^+$							
	A	iii > ii > i	B	iii>i>ii	C	i>ii>iii	D	ii>iii>i
3	The correct value of x in the compound $\text{H}_2\text{Fe}(\text{CO})_x$ is _____							
	A	3	B	5	C	4	D	6
4	If the composition of a mixture is such that $n_A = 0.3n_B$, and a small change in composition results in an increment of chemical potential of A by -10 J/mol, how much the chemical potential of B will change?							
	A	3 J/mol	B	- 3 J/mol	C	0.33 J/mol	D	- 0.33 J/mol
5	One mole of ideal gas A is mixed with one mole of ideal gas B at the same pressure. What is their entropy of mixing?							
	A	-11.5 J/mol	B	11.5 J/mol	C	5.75 J/mol	D	- 5.75 J/mol
6	Calculate the degree of freedoms of an aqueous solution of acetic acid?							
	A	0	B	1	C	2	D	3
7	The specific volumes of ice and water at 273 K are 1.0907 cm^3 and 1.001 cm^3 , respectively. Calculate the change in melting point of ice if pressure is increased by 2 atm. (Molar heat of fusion of ice = 6009.9 J/mol , $1 \text{ atm} = 101352 \text{ N/m}^2$)							
	A	-0.0075 K	B	-0.015 K	C	0.0075 K	D	0.015 K
8	[4+2] photochemical cycloaddition and [4+4] thermal cycloadditions are _____ and _____ respectively.							
	A	Suprafacial, suprafacial	B	Suprafacial, antarafacial	C	Antarafacial, antarafacial	D	Antarafacial, suprafacial
9.	 <p>In the above reactions, what are product A and B</p>							
	A	A: [1,3] product, B: [1,4] product.	B	A: [1,1] product, B: [1,3] product.	C	A: [1,3] product, B: [1,2] product.	D	A: [1,4] product, B: [1,2] product.
10	 <p>The above reaction is a _____ rearrangement and the $\Delta\sigma$ for this reaction is _____.</p>							
	A	[3,3] sigmatropic, +1	B	[1,5] sigmatropic, 0	C	[1,5] sigmatropic, 1	D	[1,3] sigmatropic, 0