

**VIT**

Vellore Institute of Technology

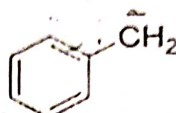

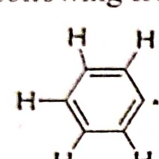
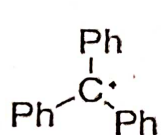
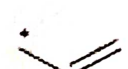
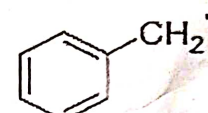
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Programme	B.Tech	Semester	: Fall 2022
Course	Engineering Chemistry	Code	: BCHY101L
Faculty	Dr Pritam Ghosh	Slot	: C1 + TC1
Time	1 ½ Hours	Class Nbr	: CH2022231700917
		Max. Marks	: 50

Continuous Assessment Test 2 (CAT 2) – December 2022

Answer ALL the Questions

5 x 10 = 50 Marks

i)	Arrange the following anions in the increasing order of stability and Explain.	5
	$\text{H}_2\text{C}^--\text{CHO}$ $\text{H}_3\text{C}-\text{CH}_2^-$ 	
ii)	Arrange the following free-radicals in the increasing order of their stability and explain.	5
	    	
	All cyclic, planar and conjugated compounds need not be aromatic. Explain this statement citing one example for the following cases: i) <i>Cyclic but not planar</i> ; ii) <i>Cyclic, planar but not conjugated</i> ; iii) <i>Cyclic, planar, conjugated but not aromatic</i>	10
i)	Identify and explain the differences between Paracetamol and Aspirin in terms of their structure, synthesis and hydrolysis.	5
ii)	Rechargeable batteries can act both as a voltaic and electrolytic cell – Explain using an example.	5
i)	What is the need for doping in a semiconducting material? Explain using relevant examples.	5
ii)	Lithium is the best known anode for energy storage devices. Justify the statement with proper reasoning and a device	5
i)	State whether the following statements are 'True' or 'False'. a) <i>Fuel cells are more environmental friendly than batteries</i> b) <i>Solid oxide fuel cells need ultrapure hydrogen gas</i>	2
ii)	Relate Silicon based solar cells with the dye sensitized solar cells specific to the materials and chemistry involved.	8

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