

Reg. No.

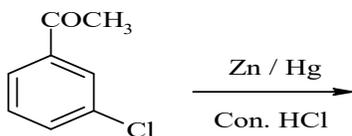
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B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Third Semester

CH18305 – APPLIED CHEMISTRY*(Chemical Engineering)***(Regulation 2018)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

	CO	RBT
1. Mention an example for multilayer adsorption.	1	R
2. What is an adsorption isotherm?	1	R
3. Write the bond order for oxygen and hydrogen fluoride.	2	AP
4. How a coordination bond is formed?	2	R
5. State the Nernst distribution law.	3	R
6. Mention an example for solute association in a solvent phase.	3	R
7. Draw the Newman projection of staggered conformation for ethane.	4	AP
8. What are enantiomers?	4	U
9. Complete the reaction and name the product	5	AP



10. Give an example for is Wittig reaction?	5	R
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PART B - (5 X16 = 80 Marks)

11. (a) (i) Derive the Langmuir adsorption equation.	(8)	1	AP
(ii) Distinguish between the physical and chemical adsorption.	(8)	1	R
(OR)			
(b) (i) Explain the BET theorem for the multilayer adsorption.	(8)	1	U
(ii) Discuss the application of the phenomina adsorption in pollution abatement.	(8)	1	R

12. (a) (i) List the postulates of molecular orbital theory. (8) 2 AP
(ii) Discuss and analyze the electronic spectrum of chlorophyll. (8) 2 AP
(OR)
- (b) (i) Draw and explain the molecular orbital diagram of nitrogen. (8) 2 U
(ii) Explain the various absorptions in the electronic spectrum of hemoglobin. (8) 2 AP
13. (a) (i) Describe the determination of partition coefficient of iodine in carbon tetrachloride and water. (8) 3 U
(ii) Outline the conditions for the validity of Nernst distribution law. (8) 3 U
(OR)
- (b) (i) Explain the modified Nernst distribution law for the solute interaction with the solvent. (8) 3 R
(ii) Discuss the application of Nernst distribution law in the solvent extraction process. (8) 3 R
14. (a) Write a detailed account on the conformation of cyclohexane. (16) 4 AP
(OR)
- (b) Discuss the resolution of racemic mixture into the enantiomeric components. (16) 4 AP
15. (a) (i) Explain the Bayer-Villiger oxidation with an example. (8) 5 U
(ii) Describe the mechanism of Hunsdiecker reaction. (8) 5 AP
(OR)
- (b) (i) Explain how the conversion of an alkene to alcohol achieved by hydroboration-oxidation reaction. (8) 5 U
(ii) Write a note on Prins reaction. (8) 5 R