Q. Code:274331

Reg. No. | | | | | | | | | | | | | | |

B.E / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Second Semester

CY18251 – ORGANIC CHEMISTRY

(Chemical Engineering)

Regulation 2018/2018A

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO1	Enable the students to learn the various reaction mechanisms.	**2**
CO2	Familiarize the industrially important catalysts.	**2**
CO3	The synthesize of different types of dyes.	**3**
CO4	Impart knowledge on the synthetic utility of organic reagents.	**3**
CO5	Understanding of thermal method of analysis and chromatographic techniques.	**3**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Mention any two examples for free radicals.	**1**	**1**
2.	Highlight the role of the reagent N-Bromosuccinimide.	**1**	**2**
3.	Distinguish the homogeneous and heterogeneous catalysis.	**2**	**2**
4.	Draw the structure of Wilkinson Catalyst.	**2**	**2**
5.	List any two requisites of a dye.	**3**	**1**
6.	What is a mordant dye?	**3**	**1**
7.	Write the importance of a synthon.	**4**	**2**
8.	What is a multistep synthesis?	**4**	**2**
9.	List any two eluents used in column chromatography.	**5**	**1**
10.	Mention any two applications of paper chromatography.	**5**	**1**

PART- B (5 x 14 = 70 Marks)

			Marks	CO	RBT LEVEL
11.(a)	**(i)**	Propose a probable mechanism for Friedel Craft alkylation.	**(7)**	**1**	**2**
	(ii	Provide a feasible mechanism for Benzoin condensation.	**(7)**	**1**	**2**

	)				
		(OR)			
(b)	**(i)**	Write a note on Aldol condensation.	**(7)**	**1**	**2**
	(ii)	Propose the mechanism for Pinacol rearrangement.	**(7)**	**1**	**2**
12.(a)	**(i)**	Explain the epoxidation reaction with an example.	**(7)**	**2**	**2**
	(ii)	Summarize the role of sonocatalysts in hydrogenation reactions.	**(7)**	**2**	**2**
		(OR)			
(b)		Describe the Shell process and list any two industrial applications.	**(14)**	**2**	**2**
13.(a)	**(i)**	Outline the Witt's theory of colour and constitution.	**(7)**	**3**	**2**
	(ii)	Interpret the synthesis and uses of the Malachite green dye.	**(7)**	**3**	**2**
		(OR)			
(b)	**(i)**	Discuss the synthesis and uses of Methyl red.	**(7)**	**3**	**2**
	(ii)	Explain the synthesis and uses of the Fluorescein dye.	**(7)**	**3**	**2**
14.(a)		Explain any four synthetic utility of Grignard reagent.	**(14)**	**4**	**3**
		(OR)			
(b)		Make use of diethyl malonate in any four synthetic utility.	**(14)**	**4**	**3**
15.(a)	**(i)**	Apply the thermo gravimetric principle in the decomposition of copper sulphate pentahydrate.	**(7)**	**5**	**3**
	(ii)	Construct and explain the analytical method Electrophoresis.	**(7)**	**5**	**3**
		(OR)			
(b)		Utilize the principle and instrumentation of High Pressure Liquid Chromatography (HPLC) in separation of analytes.	**(14)**	**5**	**3**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Apply the principle and instrumentation of gas chromatography in separation of analytes.	**(10)**	**5**	**3**