US	N																		23CH	II12A		
	F	IRST Sei	meste	r B.	E.]	Degr	ree	e S	Se	emes	ester	En	d Ex	amin	ation	(SEE)	, Ja	an/ Feb	2024			
					(Che	em	ni	ist	try	of	sm	art	mat	eria	Is						
					CS	E/IS	SE	Ξ//	ΑI	1&1	ML/	CS	E(D	S) 2	3CH	112A						
[T]	mar 2	Houngl							Mo	odel (Quest	tion P	aper -	1				[Maximum Marks: 100]				
[Time: 3 Hours]			Instructions to students:								LMAXIIIU	iii wan	KS: 100]									
			i. ii. iii.	Use	BI	ACK	K b	bal	all p	poin	_	n for	_	er cho figur	oice. e, tabl	e, etc.						
						M	Iod	dul	ıle-	-1							I	Marks	CO	RBT Level		
1.	a)	Define F CH ₃ OH-C			Expl	ain t	the	e c	cor	nstru	uctio	n w	orking	g and	appli	cation	of	07	CO1	L2		
	b)	Explain green chemical approaches by Microwave synthesis and Bio catalyzed reaction.								io	07	CO1	L1									
	c) Outline the preparation of Biodiesel along with its applications.								06	CO1	L3											
											0	R										
2.	a)	What are	PV cel	l? Ex	plai	n the	e Co	on	nstr	ructio	ion ar	nd w	orkin	g of ph	notovo	ltaic cel	1.	07	CO1	L2		
	b) Explain the production of hydrogen by electrolysis water?								07	CO1	L1											
	c) Explain the conventional synthesis of Adipic acid from benzene.									06	CO1	L2										
											Mod											
3.	a)	Define Co		n? Oı	utlin	e ele	ectr	roc	che	emic	cal th	neory	of co	orrosio	n takii	ng iron	as	07	CO2	L2		
	b)	A thick st period, it density of	was fo	und t	o ex	perie	ence	ce a	a v	weig	ght lo	oss 2	50 g d	due to	corros	•		07	CO2	L3		
	c)	Illustrate	the ext	ractio	n of	copp	per	r fr	fron	m e-v	-wast	te alo	ng wi	ith read	ction.			06	CO2	L2		
											(OR										
4.	a)	Interpret the method used to control corrosion by metal coating and summarize the steps involved in that method											nd	07	CO2	L2						
	b)	What is e waste? Summarize the effect of e-waste on Environment and Human health. Define electroplating? Explain the electroplating of chromium along with the reactions.									nd	07	CO2	L1								
	c)										e	06	CO2	L2								

Module-3

5.	a)	In a polymer, 30% molecules have molecular mass 20,000 g/mol, 40% molecules have molecular mass 30,000 g/mol, and remaining molecules have molecular mass 60,000 g /mol. Calculate the number average and weight average molecular mass of the polymer.	07	CO3	L3					
	b)	How to determine the amount of HCl and CH ₃ COOH present in the given solution by Conductometric method.	07	CO5	L2					
	c)	Explain the synthesis, properties and applications of Silicone rubber.	06	CO3	L2					
		OR								
6.	a)	Explain the principle, instrumentation of Colorimetry and its application in estimation of copper.	07	CO5	L2					
	b)	What are Conducting polymers? Explain the mechanism of conduction in polyacetylene.	07	CO3	L2					
	c)	Explain the synthesis, properties and applications of Kevlar Fibre.	06	CO3	L2					
Module-4										
7.	a)	What are the sensors? Explain how Electrochemical gas sensors used to detect SO_x and NO_x gases.	07	CO4	L1					
	b)	Explain the Construction, working and applications of Lithium ion battery.	07	CO4	L2					
	c)	With a neat sketch explain the measurement of dissolved oxygen by electro chemical sensors.	06	CO4	L2					
8.		OR								
	a)	Define Concentration cell? A concentration cell was constructed by immersing two copper electrodes in 0.1M and 1.0M CuSO ₄ solution. Write	07	CO4	L1					
		cell reactions and calculate the EMF of the cell. Describe the construction working and application of Vanadium redox flow	. =	CO4	L.2.					
	b)	battery.	07	CO4	1.2					
	c)	Explain the working principle and applications of Optical Sensors.	06	CO4	L2					
		Module-5								
9.	a)	What are memory devices? Interpret the classification of electronic memory devices.	07	CO5	L2					
	b)	Explain the properties and applications of Organic Light Emitting Diodes.	07	CO5	L2					
	c)	Describe the principle, properties and applications of Quantum dot sensitized solar cells (QDSSC`s).	06	CO5	L2					
		OR								
10.	a)	What are liquid crystals? Explain the classification of liquid crystals with examples.	07	COS	L1					
	b)	Explain the properties and applications of Quantum Light Emitting Diodes	07	CO5	L2					
	c)	What are the Nanomaterials? Outline the preparation of nano materials by Sol-gel method.	06	CO5	L3					