

		(OR)			
b)	i.	Explain the purification process of sea water by reverse osmosis.	10	K2	CO1
	ii.	Explain the process of Calgon conditioning used in water treatment.	6	K2	CO1
12.	a)	Illustrate the mechanism of addition, Condensation and copolymerization with suitable examples of polymers.	16	K1	CO2
		(OR)			
b)		Analyze the stages of initiation, propagation and termination in the free radical polymerization mechanism.	16	K2	CO2
13.	a)	Illustrate the process of synthesizing nanomaterials using the Sol-gel and Solvothermal methods with relevant chemical reactions.	16	K2	CO3
		(OR)			
b)		Explain the synthesis of carbon nanotubes by CVD method with their major applications.	16	K2	CO3
14.	a)	i.	8	K3	CO4
		Explain the working mechanism of p-n junction silicon solar cells.			
		ii.	8	K2	CO4
		Illustrate how wind energy is converted into electrical energy using wind turbines and generators.			
		(OR)			
b)		Illustrate the construction and working of a lead-acid battery using a diagram and derive the cell reactions during charging and discharging.	16	K3	CO4
15.	a)	Explain the important constituents of paint and describe the function of each constituent.	16	K3	CO5
		(OR)			
b)		Explain the working principle and methods of underground pipeline protection using sacrificial anode and impressed current cathodic protection.	16	K2	CO5