

May - June 2023 (B.Tech) Program: FY Examination: FY Semester: II Course Code: BSC203 Course Name: Material Chemistry Duration: 02 Hours Max. Marks: 45				
Instructions: (1) All questions are compulsory. (2) Draw neat diagrams wherever applicable. (3) Assume suitable data, if necessary. B.Tech. FY I 2BSC203_QP A				
		Max. Marks	CO	BT level
Q 1	Solve any five questions out of six	15		
i)	What is the difference between thermoplastics and thermosetting plastics?	3M	1	1
ii)	Explain the method to synthesize ceramic silicon carbide.	3M	1	2
iii)	An alloy of tin and lead contains 70% tin. Find the mass of eutectic in 1 kg of alloy if the eutectic contains 64% of tin ?	3M	2	3
iv)	What is sintering? Write the stages of sintering.	3M	3	2
v)	What is glass transition temperature? Which factors influence the glass transition temperature?	3M	1	2
vi)	What are whiskers? What are their characteristics?	3M	1	1
Q.2	Solve any three questions out of four.	15		
i)	Write the composition, properties and uses of German silver and Timman's solder?	5M	1	1
ii)	A polymer has following composition: 150 molecules of molecular weight 2100, 200 molecules of molecular weight	5M	1	3

	3500, 250 molecules of molecular weight 4000 and 300 molecules of molecular weight 5000. Calculate the number and weight average of molecular weight and polydispersity index			
iii)	Explain with the help of a neat diagram how the fiber reinforced composite materials are processed by pultrusion process?	5M	3	2
iv)	Draw and explain the phase diagram of water system.	5M	2	3
Q.3	Solve any three questions out of four.	15		
i)	What is powder metallurgy? How are metal powders prepared by process of reduction?	5M	3	2
ii)	Explain effects of the elements Cr, Co, Mn, Ni, Mo on the properties of the alloy steel.	5M	1	1
iii)	What are large particle reinforced composite materials? Outline their properties with examples.	5M	1	2
iv)	With a neat diagram explain extrusion molding of plastic.	5M	3	2
