July- August 2023
(B.Tech) Program: FY
Examination: FY Semester: II Supplementary
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 are fillers? Write their functions and examples.	3M	3	1
ii)		What are the applications of ceramics?	3M	1	2
iii)		An alloy of tin and lead contains 75% tin. Find the mass of eutectic in 1 kg of alloy if the eutectic contains 64% of tin ?	3M	2	3
iv)		What is atomization? What is its significance?	3M	3	2
v)		What are the applications of conducting polymers in different engineering fields?	3M	1	2
vi)		What is matrix phase of composite materials? What are its functions?	3M	1	1
Q.2		Solve **any three** questions out of four.	**15**		
i)		Write the composition, properties and uses of Duralumin and Commercial brass?	5M	1	1
ii)		A polymer has following composition: 100 molecules of	5M	1	3

	molecular weight 2100, 200 molecules of molecular weight 3100, 250 molecules of molecular weight 4100 and 300 molecules of molecular weight 4500. 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? Explain powder injection molding with a neat diagram.	5M	3	2	
ii)	What is shape memory alloy? Write its application.	5M	1	1	
iii)	What are laminar composite materials? Outline their properties and applications with a neat diagram.	5M	1	2	
iv)	With a neat diagram explain transfer molding of plastic.	5M	3	2	

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