

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSc
BRANCH: CHEMISTRY

SEMESTER : VI
SESSION : SP/2023

SUBJECT: CH316 NOVEL INORGANIC SOLIDS

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Give the mechanism and instrumentation of hydrothermal crystal growth method.	[5] 1	1
Q.1(b)	Give the mechanism involved in gelation process. Give advantages and disadvantages of sol gel technology.	[5] 1	4
Q.2(a)	What causes ferromagnetism? Derive magnetic moment for transition metal complexes	[5] 2	3
Q.2(b)	Differentiate between curie and Neel temperature. Draw and explain hysteresis loop	[5] 2	5
Q.3(a)	Discuss the important properties and application of gold nanoparticle.	[5] 3	4
Q.3(b)	What is carbon nanotube? Write short notes on inorganic nanowires.	[5] 3	2
Q.4(a)	Write short notes on different alloy of aluminium.	[5] 4	1
Q.4(b)	Discuss the classification of carbon alloy steels.	[5] 4	2
Q.5(a)	Why polyaniline is considered as conducting polymer? Write different oxidation states of polyaniline.	[5] 5	3
Q.5(b)	Explain the function of ion exchange resins.	[5] 5	4

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