

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION SP/2023)

CLASS: I MSc  
BRANCH: CHEMISTRY

SEMESTER : VI  
SESSION : SP/2023

SUBJECT: CH314 ORGANIC CHEMISTRY-V

TIME: 02 Hours

FULL MARKS: 25

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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		CO	BL
Q.1(a)	Compare between chromophores and auxochromes.	[2]	1 1
Q.1(b)	Explain the appeared color of the compounds; Benzene (colorless), aniline (colorless), nitrobenzene (pale yellow), p-aminonitrobenzene (orange-red).	[3]	1 2
Q.2(a)	Show the scheme for the synthesis of Malachite green.	[2]	1 2
Q.2(b)	What is C-coupling and N-coupling? How does N-coupled product converted to C-coupled product? Give mechanism.	[3]	2 1
Q.3(a)	What is Schiff taste? Give explanation with possible mechanism.	[2]	2 2
Q.3(b)	Explain the color of phenolphthalein in different pH range.	[3]	2 3
Q.4(a)	Draw and name a compound, which is the smallest carbohydrate? Comment on its chirality.	[2]	1 1
Q.4(b)	Draw and discuss the mutarotation with an example of D-Glucose and explain the role of anomeric carbon in this process.	[3]	2 2
Q.5(a)	Write a short note on Kiliani-Fischer synthesis.	[2]	1 2
Q.5(b)	Convert D-Glucose to pyranose Haworth Form and Distinguish the $\alpha$ - and $\beta$ -form.	[3]	2 3

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