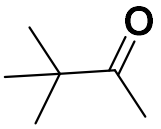
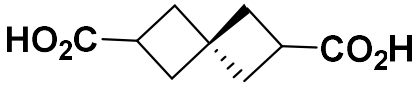
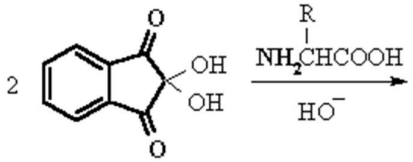
BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP2025)

CLASS: I.M.Sc. **SEMESTER: VI**
BRANCH: CHEMISTRY **SESSION: SP-2025**
SUBJECT: CH328 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**

			CO	BL
Q.1(a)	Explain with proper examples the meaning of the term's synthon and synthetic equivalent.	[2]	1	4
Q.1(b)	Show the retro synthetic analysis of the following compound and carry out the synthesis 	[2+1]	2	4
Q.2	Show the retro synthetic analysis of the following compound and carry out the synthesis 	[2.5+2.5]	1	3
Q.3	(a) What is the significance of pI of aminoacid? Calculate the pI of histidine having pK1, pK2 and pK3 value of 1.82, 9.17, and 6, respectively. (b) What are the limitations of alpha-aminoacid synthesis by amination of alpha-halogenated carboxylic acid? Describe the simple modification (with mechanism) of the process to overcome the limitations.	[2+3]	1	3
Q.4	(a) Complete the following recation and explain the mechanism 	[2+3]	1	3
	(b) Describe any one method for the synthesis of amino acid from aldehyde or ketone. Show the mechanism.			
Q.5(a)	Write down the synthesis of naphthalene through Haworth's methods	[3]	1	3
Q.5(b)	How many resonance structures are there for anthracene? Draw all the possible resonance structures.	[2]	2	4

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