

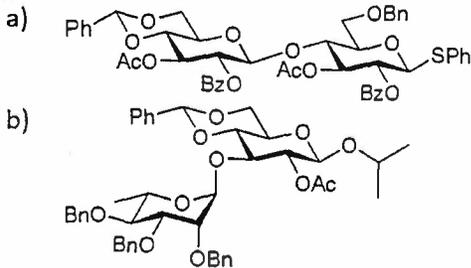
End Semester Examination
CH4202

Full Marks: 40

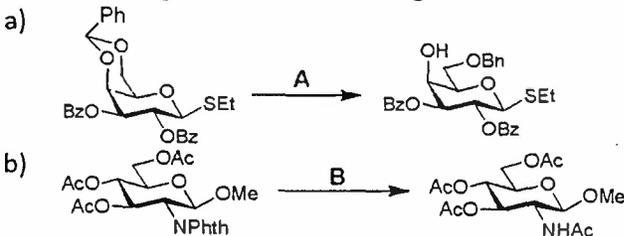
Duration: 2.5 Hours

1. Write the structure of the following molecules: 2 × 1.5
- a) Ethyl 2,3-di-O-benzoyl-4-O-acetyl-6-O-trityl-β-D-galactopyranoside
- b) Methyl 2,3-O-isopropylidene-4,6-di-O-acetyl-α-D-mannopyranoside

2. Write the IUPAC names of the following structures: 2 × 2



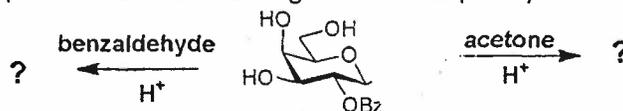
3. Write the reagents for the following transformations: 2 × 1.5



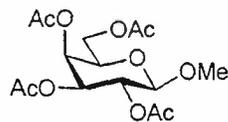
4. a) Write the detailed scheme for the synthesis of the following protected disaccharide from commercially available D-glucose (you must show every steps with appropriate reagents). 7

Methyl 2,3-di-O-benzoyl-4,6-O-benzylidene-β-D-glucopyranosyl-(1→4)-2,3-di-O-acetyl-6-O-trityl-β-D-glucopyranoside

- b) Write the major products of the following reactions. Explain your answer. 2 × 1.5



5. Answer the questions regarding the ¹H NMR of the following compound:



- a) Complete the following table 4

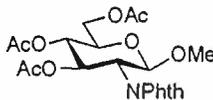
Proton	Peak multiplicity	Coupling constant
H-1		
H-2		
H-4		
H-6a		

Balaram Jukhopadhyay 01/19

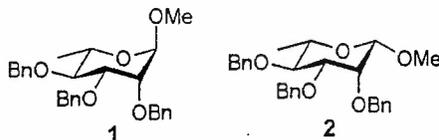
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- b) What changes in the ^1H NMR spectrum will you expect in respect of the signals for H-1 and H-2 if the corresponding α -anomer of the compound is concerned? Explain in respect of peak multiplicity and coupling constant. 2

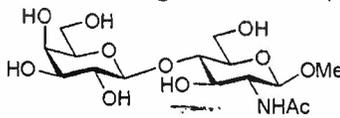
- c) How many 'carbon' peaks would you expect for the 'acetates' in the following compound? 2



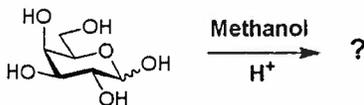
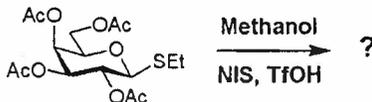
- d) What will be the peak multiplicity of the anomeric protons of the following compounds? 2



6. a) Write the detailed scheme for the synthesis of the following disaccharide from commercially available D-galactose and D-glucosamine hydrochloride 6



- b) What will be the major anomer for the following reactions? Explain your answer with mechanism. 4



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01/05/19

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