

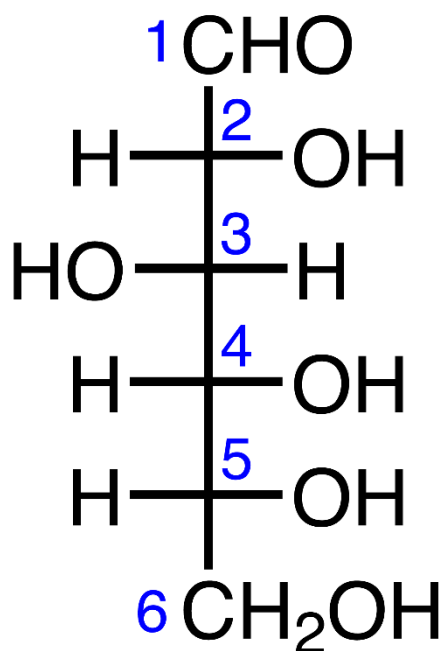
Marvellous monosaccharides

Education in Chemistry

September 2019

rsc.li/2YTOmOI

Answers

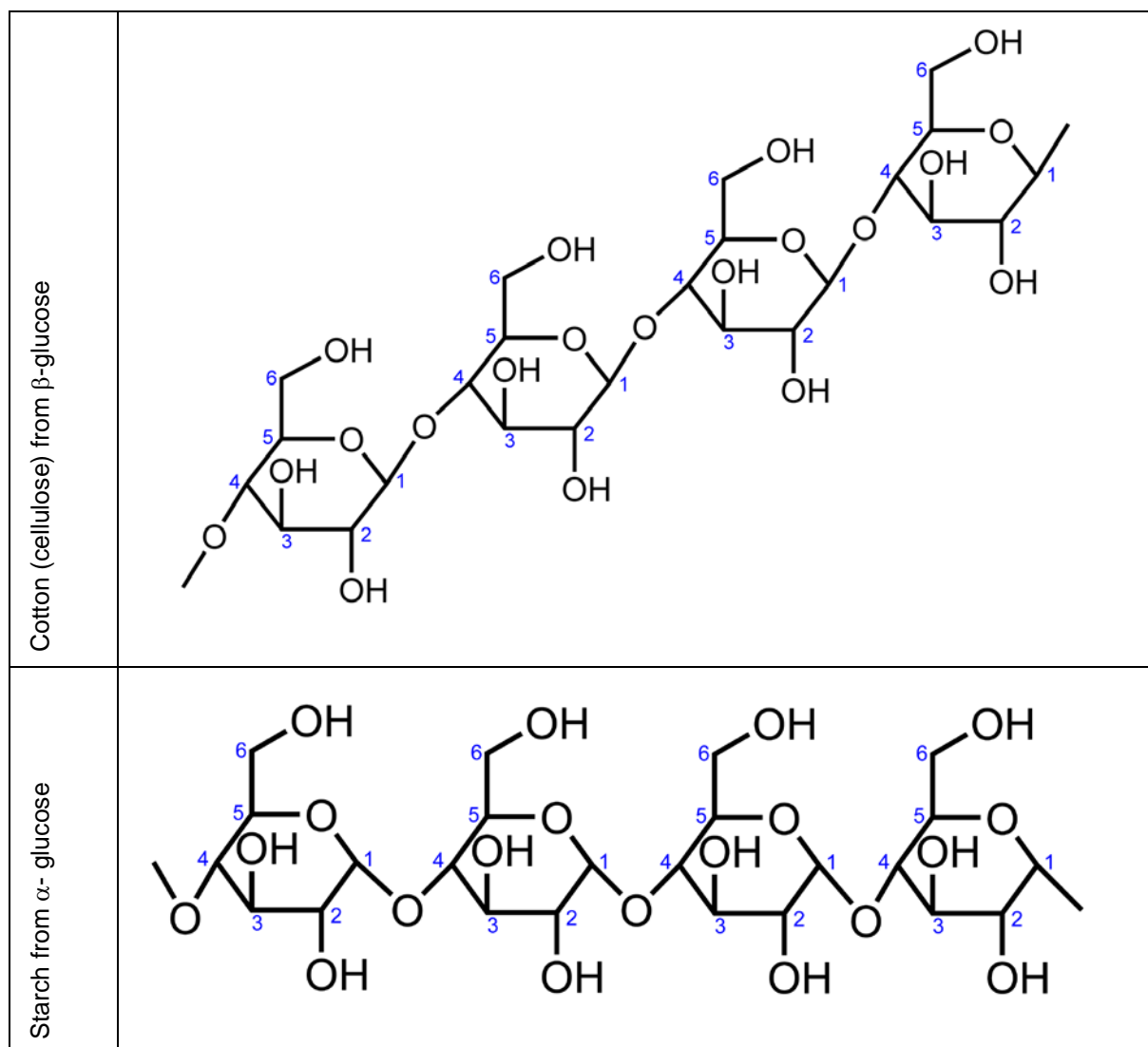


1. What is the IUPAC systematic name for glucose as shown in the diagram above?
2,3,4,5,6-pentahydroxyhexanal

2. What is the difference between α - glucose and β -glucose?

The hydroxyl (OH) at C1 have different arrangements in space.

3. Draw four repeating units of the cellulose and starch polymers.




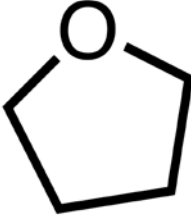
4. Suggest how the differences you noted in question 2 are influencing the polymer structure.

The cellulose chain formed from β -glucose is a linear chain. The starch polymer chain formed from α -glucose is kinked (using proper structural forms it winds itself like a spring).

5. Complete the table to show the skeletal structure of tetrahydropyran.

Pyran	Tetrahydropyran

6. Complete the table to show the skeletal structure of tetrahydropyran.

Furan	Tetrahydrofuran
	

7. Draw the two possible furanose structures of glucose (hint: look at the two pyranose forms and apply the difference to the form you are trying to create)

Stereochemistry not crucial at this level

α -furanose form	β -furanose form
