

**PRACTICE MIDTERM 1 QUESTIONS
(ABBREVIATED)
MIDERMS WILL HAVE 16 MULTIPLE CHOICE
AND 8 REGULAR QUESTIONS**

THIS SAMPLE IS MEANT AS AN ILLUSTRATION

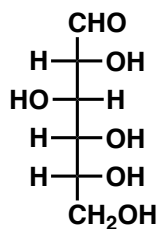
NAME:

Perm Number:

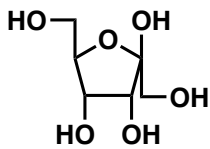
Questions 1-16 are multiple-choice. Each is 3 points. Clearly circle correct answer(s).

The remaining questions 17-24 are regular. There is a total of 24 questions. 100 points total.

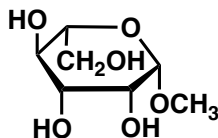
1. Which of the following compounds is an aldohexose?



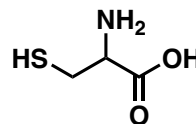
A



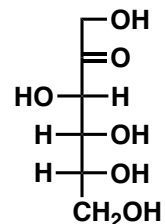
B



C

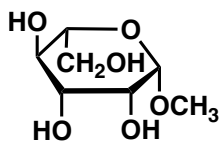
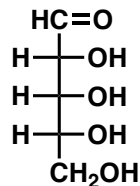


D

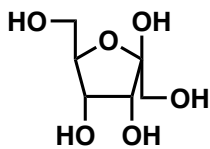


E

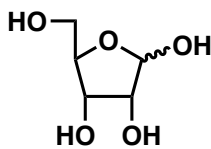
2. Which is a correct cyclic form of the following monosaccharide?



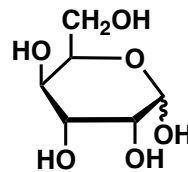
A



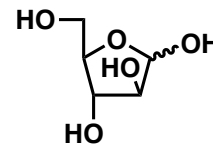
B



C



D

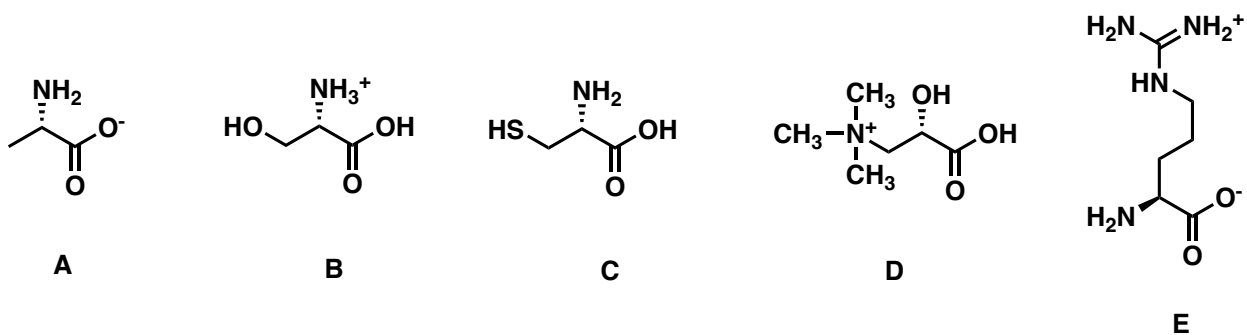


E

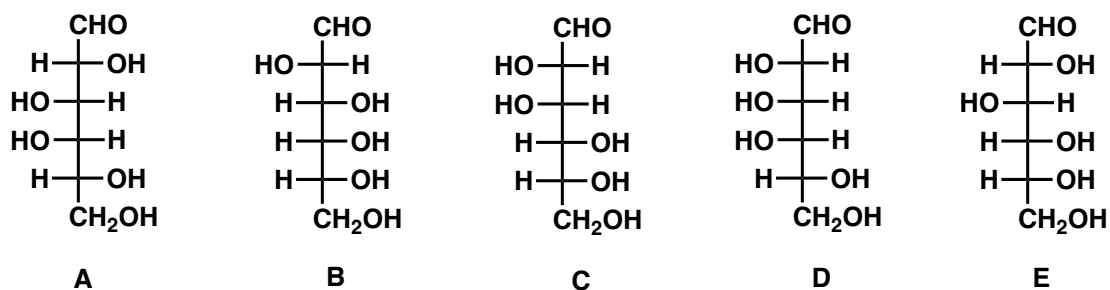
3. How many stereoisomers are possible for an aldohexose

- A. 4
- B. 8
- C. 12
- D. 16
- E. 32

4. Which of the following is a **zwitterion**?



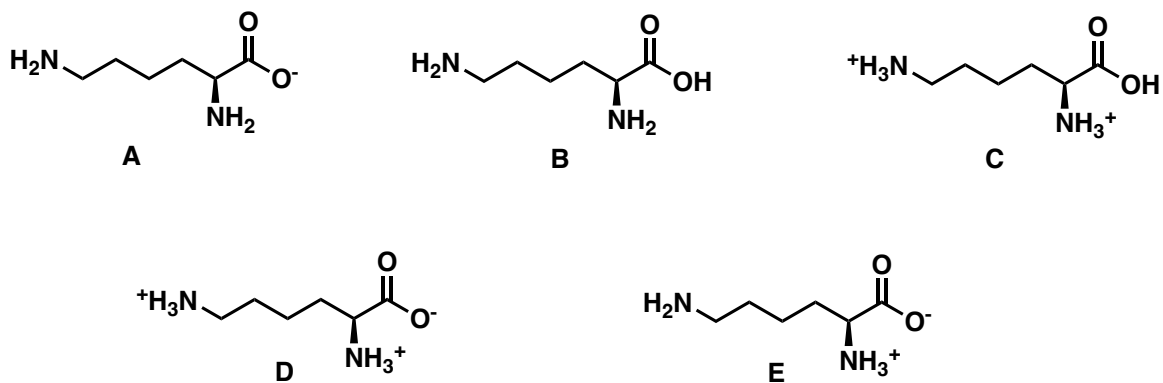
5. What product(s) is (are) formed in a Kiliani-Fischer synthesis starting from D-lyxose. Circle all correct choices.



6. Which of the following monosaccharides yield the same alditol upon reduction with NaBH_4 as does D-mannose

- A. L-glucose
- B. L-mannose
- C. L-gulose
- D. D-arabinose
- E. none of the above

7. In what form is lysine likely to exist at $\text{pH} = 0$?

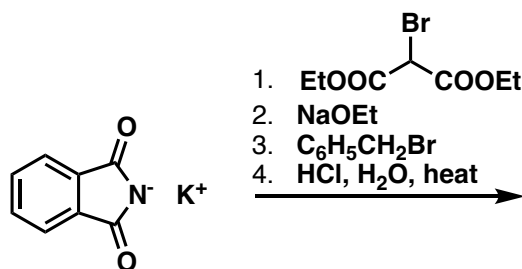


17. Provide the Haworth projection of methyl α -D-glucopyranoside

6 pt

19. Draw the final product(s) of the following series of reactions:

6 pt



24. Draw the structure of the product of oxidation of D-arabinose with hot HNO_3 . Provide its name. Is the product optically active? Also draw the structure of Wohl degradation product of D-arabinose.

7 pt

