

Grade   10   of 10 points

Points

- (3) 1. Choose the term from the key list at the right which best describes the isomeric relationship between each pair of compounds below, and place the letter for that term in the blank to the left of the compound pair.: 0.5 points each

  C   alpha-D-glucopyranose and alpha-D-galactopyranose

  E   alpha-D-glucopyranose and alpha-D-ribofuranose

  C   D-erythrose and D-threose

  A   D-glucose and D-fructose (open chain form)

  B   alpha-D-glucopyranose and alpha-L-glucopyranose

  D   alpha-D-glucopyranose and beta-L-glucopyranose

- A. structural isomer**  
**B. enantiomer**  
**C. epimer**  
**D. diastereoisomer, but not an epimer**  
**E. not an isomer**

- (4) 2. Choose the classification from the key list at the right which describes each carbohydrate below, and place the letter for that classification in the blank to the left of the carbohydrate. . .

  G   glucose

  C   erythrose

  H   fructose

  A   glyceraldehyde

  B   dihydroxyacetone

  E   ribose

  J   sucrose

  I   maltose

0.5 pts each

- A. aldotriose monosaccharide**  
**B. ketotriose monosaccharide**  
**C. aldotetrose monosaccharide**  
**D. ketotetrose monosaccharide**  
**E. aldopentose monosaccharide**  
**F. ketopentose monosaccharide**  
**G. aldohexose monosaccharide**  
**H. ketohexose monosaccharide**  
**I. reducing disaccharide**  
**J. non-reducing disaccharide**

- (3) 3. Following is a list of fatty acids identified by the shorthand notation, showing number of carbon atoms and number and position of the double bonds. Complete the table giving the IUPAC and common names of these fatty acids, as well as the omega class for the unsaturated acids. (The first one is filled in as an example). 0.5 pts. each

| Abbreviation                | IUPAC Name                      | Common Name      | Omega Class |
|-----------------------------|---------------------------------|------------------|-------------|
| 9-C <sub>16:1</sub>         | 9-hexadecenoic acid             | palmitoleic acid | Omega-7     |
| 9,12,-C <sub>18:2</sub>     | 9,12-octadecadienoic acid       | linoleic acid    | Omega-6     |
| 5,8,11,14-C <sub>20:4</sub> | 5,8,11,14-eicosatetraenoic acid | arachidonic acid | Omega-6     |