

UNIVERSIDAD DEL TURABO
ESCUELA DE CIENCIAS Y TECNOLOGIA
DEPARTAMENTO DE FISICA & QUIMICA
GURABO, PUERTO RICO

Curso: FUNDAMENTOS DE QUIMICA ORGANICA Y BIOLOGICA
FUNDAMENTALS OF ORGANIC AND BIOLOGICAL CHEMISTRY

Clave del Curso: CHEM-225

Texto sugerido

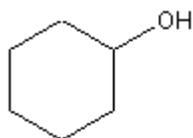
Timberlake, Karen C. *Chemistry: An Introduction to General, Organic, and Biological Chemistry*.
Upper Saddle River: Pearson Prentice Hall, 11th Edition, 2012.

Fecha: 21 de febrero de 2013

EJERCICIOS PRÁCTICOS

Capítulo # 12-Compuestos Orgánicos con Oxígeno y Azufre- *Organic Compound With Oxygen and Sulfur*

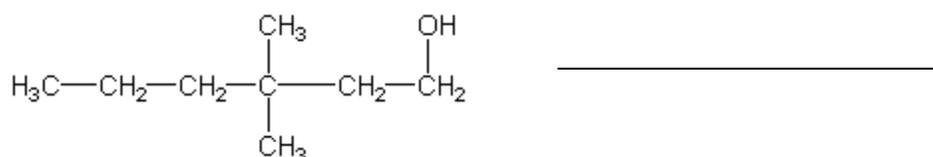
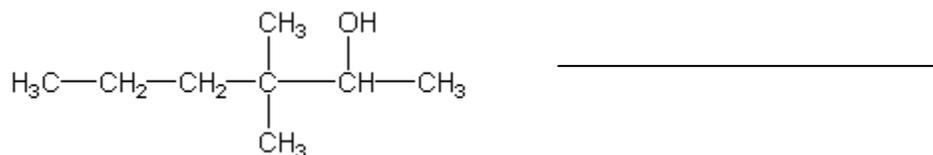
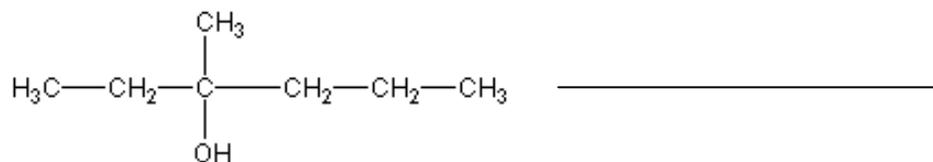
1- ¿How would you classify this alcohol?



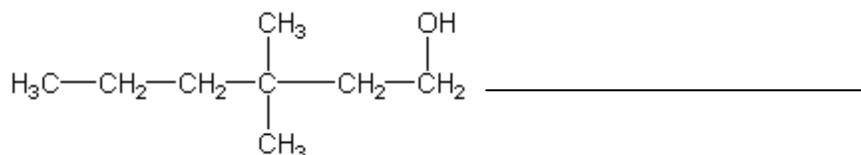
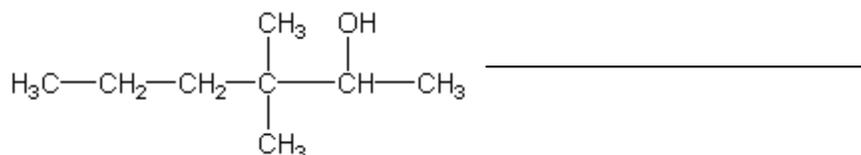
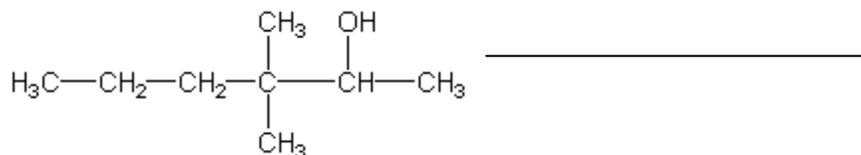
- a) Alcohol Primario
- b) Alcohol Secundario
- c) Alcohol Terciario
- d) Alcohol Cuaternario

¹ CHEM-225- mg-7 de febrero de 2013

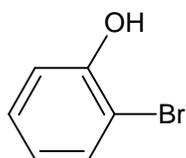
2- How would you classify these alcohols?



3- What is the name of this compound?

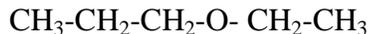


4- What is the name of this alcohol?



- a) 2-bromophenol
- b) 2-bromo-1-hydroxybenzene
- c) 1-bromophenol
- d) 1-bromohydroxybenzene

5. What is the common name of this ether?



- a) ethyl propyl ether
- b) methyl butyl ether
- c) butyl methyl ether
- d) dibutyl ether

6- Which statement(s) is true?

- a) $\text{CH}_3\text{-CH}_3$ is more soluble in water than $\text{CH}_3\text{-CH}_2\text{-OH}$.
- b) $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-OH}$ is more soluble in water than $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH}_2\text{-CH}_2\text{-OH}$
- c) Benzene is less water-soluble than phenol
- d) Statements 2 and 3 are true.

7- Which compound will have the highest boiling point?

- a) 2-hexanol
- b) 2-butanol
- c) methyl propyl ether
- d) pentane

8- Why are short-chain alcohols water-soluble?

- a) They are acids.
- b) They are nonpolar.
- c) They are bases.
- d) They can form hydrogen bonds.

9- The compound $\text{CH}_3\text{-O-CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ is named

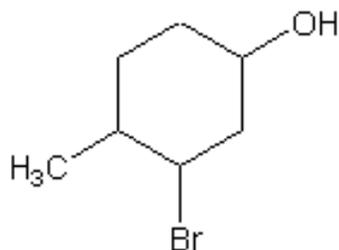
- a) methyl ether.
- b) methane ethane ether.
- c) ethyl methyl ether.
- d) Butyl methyl ether

10- What would the product of this reaction be?



- a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{-S-S-CH}_2\text{CH}_3$
- b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{SH}$
- c) $\text{HSCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{SH}$
- d) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$

11- What is the IUPAC name of this alcohol?



- a) 2-bromo-1-methyl-4-cyclohexanol
- b) 3-bromo-4-methyl-1-cyclohexanol
- c) 3-bromo-4-methylcyclohexanol
- d) 3-bromo-4-methylphenol

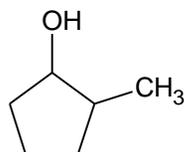
12- Which of the following is NOT a functional group that contains oxygen?

- a) Ether
- b) Thiol
- c) Phenol
- d) Alcohol

13- Which of the following statements about aldehydes and ketones is true?

- a) The carbonyl group has a partial negative charge on the carbon.
- b) Ketones can be oxidized with Tollen's Reagent.
- c) Aldehydes are more water-soluble than alkenes.
- d) Ketones are named with an "-al" ending.

14- What is the IUPAC name this compound?



- a) Methylcyclopentanol
- b) 2-methylcyclopentanol
- c) 2-hidroxi-1-methylcyclopentane
- d) 2-methyl-1-cyclopentanol
- e) Cyclopentylmethanol

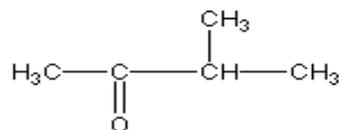
15- The compound $\text{CH}_3\text{CH}_2\text{-SH}$ is in organic family known as:

- a) Ethers
- b) Thiols
- c) Alcohols
- d) Sulfides
- e) Amino acids

16- The oxidation of cyclopentanol will give:

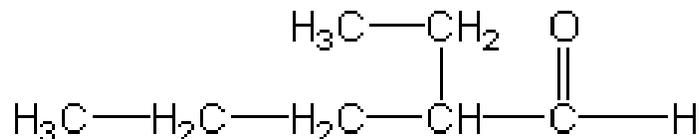
- a) pentanal.
- b) Cyclopentanone
- c) cyclopentene.
- d) cyclopentanone

17- What is the IUPAC name for this compound?



- a) 2-methylpropanal
- b) 2-methyl-3-butanone
- c) 3-methyl-2-butanone
- d) 3-methylbutanone

18- What is the IUPAC name for this compound?



19 – An enantiomer is: ¹

- a) a stereoisomer that is not a mirror image of another molecule
- b) a stereoisomer that is a mirror image of another molecule
- c) a diastereoisomer
- d) a constitutional isomer
- e) a geometric isomer

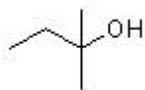
20- Chirality occurs when stereoisomers have mirror images that are:

- a) superimposable
- b) The same
- c) not superimposable
- d) not visible to one another
- e) identical

¹ Preparado por Prof. Miguel A. Gutiérrez - 21 de febrero de 2012

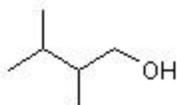
21) The skeletal formula represents what type of alcohol?

- A) primary
- B) secondary
- C) tertiary
- D) quaternary
- E) none

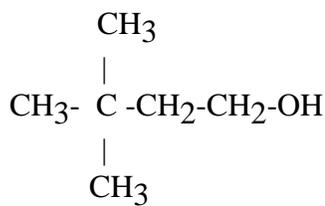


22) The skeletal formula represents what type of alcohol?

- A) primary
- B) secondary
- C) tertiary
- D) quaternary
- E) none



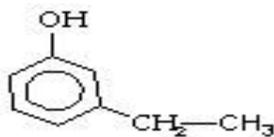
23) What is the product when this compound undergoes gentle oxidation?



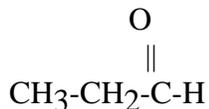
- A) hexanal
- B) 2,2-dimethylbutanal
- C) 2,2-dimethyl-4-butanone
- D) 3,3-dimethyl-1-butanone
- E) 3,3-dimethylbutanal

24- What is the IUPAC name for this compound?

- a) 2-methylphenol
- b) 2-methyl-3-butanone
- c) 3-methyl-2-butanone
- d) 3-ethylphenol
- e) 3-methylbutanone



25- What is the IUPAC name for this compound?



- a) hexanal
- b) 2,2-dimethylbutanal
- c) 2,2-dimethyl-4-butanone
- d) 3,3-dimethyl-1-butanone
- e) 2-propanona