

University of Palestine



Midterm Exam
Second semester
2014/2015
Total Grade: 20

Course No: DNTT1104
Course Title: Organic Chemistry
Date: 24/03/2015
No. of Questions: 4
Time: 1 hours
Using Calculator (Yes)

Instructor Name: Dr Raef Ahmed
Student No.: _____
Student Name: _____
Student group: _____
Dep. / Specialist: _____
Using Dictionary (No)

Q. 1) Indicate if the following statements are true (v) or false (X) :- (6.5 Marks)

- 1) () Heptane Partially soluble in water.
- 2) () A primary alcohol has one -OH group, a secondary alcohol has two -OH groups, and a tertiary alcohol has three -OH groups.
- 3) () Numerous organic compounds are known that do not occur in living organism.
- 4) () Aqueous solutions or organic compounds do not conduct electricity.
- 5) () Aldehydes, ketones, carboxylic acids, and esters all contain a carbonyl group.
- 6) () Constitutional isomers have the same molecular formulas and the same connectivity of their atoms.
- 7) () Hexane and cyclohexane are constitutional isomers.
- 8) () Both 2-hexene and 3-hexene can exist as pairs of *cis-trans* isomers.
- 9) () If a compound fails to react with Br₂, it is unlikely that the compound contains a carbon-carbon double bond.
- 10) () Phenols are weak acids and react with strong bases to give water-soluble salts.
- 11) () The bonds between the atoms in an organic molecule are generally ionic bond.
- 12) () Cyclobutane is unsaturated hydrocarbons.
- 13) () Higher-molecular-weight alcohols are much less soluble in water because the size of the hydrocarbon portion of their molecules becomes so large relative to the size of the -OH group

Q. 2) Choose the correct answer of each of the following: - (7.5 Marks)

Which of the following situations do not meet the "bonding requirement" for carbon atoms.

- a) Single bond and two double bonds
- b) Three single bonds and a triple bond
- c) A double bond and a triple bond
- d) all the above

Which compound contains a triple bond?

- a) CH₄ b) C₂H₂ c) C₃H₆ d) C₄H₁₀

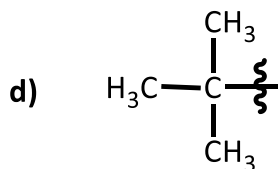
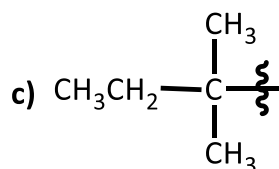
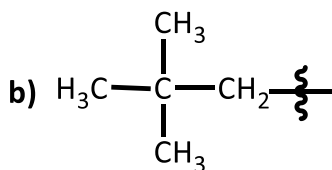
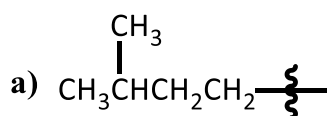
Which of the following is an example of alkene

- a) C₂H₆
- b) C₂H₄
- c) C₄H₆
- d) Answer b and c

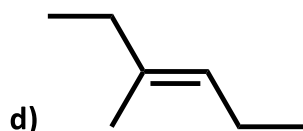
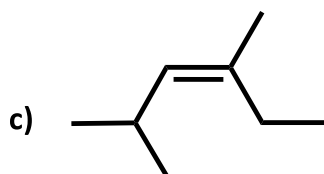
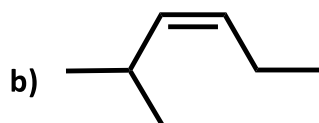
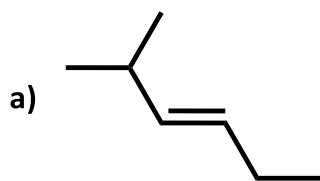
The compound CH₃-O-CH₂CH₃ is:

- a) alcohols b) ether c) ester d) ketone

The Isopentyl group is :



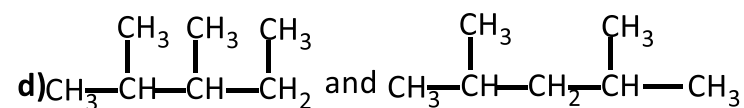
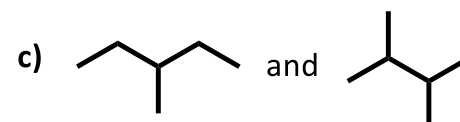
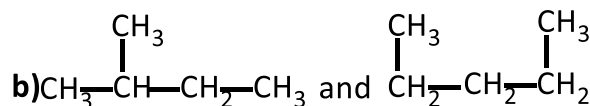
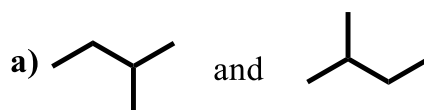
A structural formula for *trans*-2-Methyl-3-hexene is:



Which of the following haloalkane used as anesthetics

- a) Chloroform
- b) Ethyl Chloride
- c) Fluothane
- d) all of the above

which of the following pairs represent structural isomers ?



Which of the following compounds does not undergo addition reaction

- a) Benzene
- b) Aniline
- c) Toluene
- d) All of the above

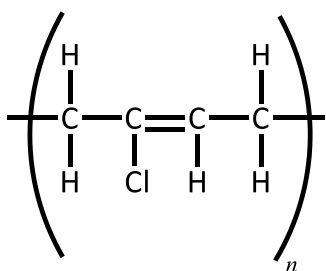
Which of the following reactions can be used to convert an alkene to an alkane?

- a) Hydrogenation
- b) Halogenation
- c) Hydrohalogenation
- d) Hydration

Which compound is a likely product from addition of Cl_2 to 1-butene?

- a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHCl}_2$
- b) $\text{CH}_3\text{CH}_2\text{CHClCH}_2\text{Cl}$
- c) $\text{ClCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl}$
- d) $\text{CH}_3\text{CH}_2\text{CCl}_2\text{CH}_3$

The structural formula of the monomer(s) from which the following polymer was made



- a) $\text{CF}_2=\text{CF}_2$ b) $\text{CH}_2=\text{CH}-\text{Cl}$
- c) $\text{CH}_2=\text{C}(\text{Cl})-\text{CH}=\text{CH}_2$
- d) $\text{CH}_2=\text{C}(\text{Cl})-\text{C}(\text{Cl})=\text{CH}_2$

Which of the following alkanes will have the lowest boiling point?

- a)
- b)
- c)
- d)

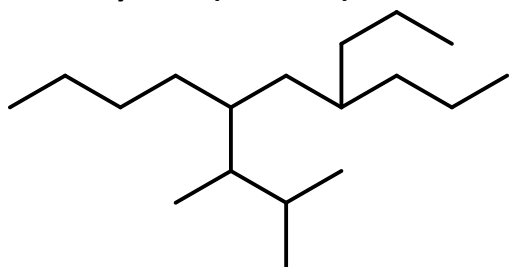
Which of the following molecules is *trans*-1, 2-dimethylcyclohexane?

- a)
- b)
- c)
- d)

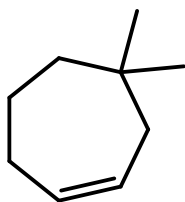
Which of the following is tertiary alcohols

- a)
- b) $\text{CH}_3-\text{CH}(\text{CH}_3)-\text{CH}_2-\text{OH}$
- c) $\text{CH}_3-\text{C}(\text{CH}_3)_2-\text{CH}_2-\text{CH}(\text{OH})-\text{CH}_3$
- d)

Q. 3) Name the following compounds using IUPAC system (1.5 each)



IUPAC Name:



IUPAC Name:

Q.4) Draw the following compound (1.5 each)

a) 3,4-Diisopropyl-2,5-dimethyl-3-hexene

b) 2,5-dimethylbenzoic acid

Do not waste your time by looking here and there. Just focus, stay calm and enjoy the chemistry that you love. Have Fun. Dr. Raef Ayesh Ahmed