

King Saud University

Petroleum and Natural Gas Engineering

PGE 362: **Properties of Reservoir Fluids**

Tutorial two

Q1

The table below gives the hydrocarbons which have been identified in the gasoline fraction of a crude oil.

Identify the paraffins, naphthenes, and aromatics and draw the molecular structure of each.

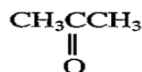
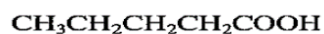
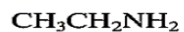
<u>Hydrocarbon</u>
Cyclopentane
2,2-Dimethylbutane
2,3-Dimethylbutane
2-Methylpentane
3-Methylpentane
n-Hexane
Methylcyclopentane

Solution

HC	Type	Molecular Structure
Cyclopentane	naphthene	
2,2-Dimethylbutane	paraffin	
2,3-Dimethylbutane	paraffin	
2-Methylpentane	paraffin	
3-Methylpentane	paraffin	
n-Hexane	paraffin	
Methylcyclopentane	naphthene	

Q2

Name the following compounds:



Solution

Molecular Structure	Name
$\text{CH}_3\text{CH}_2\text{SH}$	Ethanol
$\text{CH}_3\text{CH}_2\text{NH}_2$	Ethylamine
$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{COOH}$	Pentanoic acid
	Cyclopentanol Cyclopentyl alcohol Hydrocyclopentane
$\begin{array}{c} \text{CH}_3\text{CCH}_3 \\ \parallel \\ \text{O} \end{array}$	Acetone Propanone

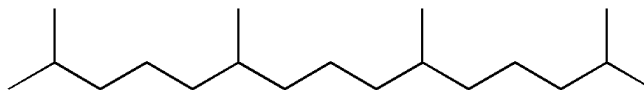
Q3

Draw structural formulas for:

a. Pristane (2,6,10,14-tetramethylpentadecane)

b. Phytane (2,6,10,14-tetramethylhexadecane)

a.



b.

