	Physical Science (PSC 102) F	orm A 10/29/18 M 9 am	MWF Dr. Hahn E	xam #	
Sxam III				((sign)
Name_		(print) Name			_
have no grade it	how work for partial credit on partial credit. Please write and the control of th	extica coed	F-Eran Ve	to Gree	3
Part I Partial	MULTIPLE CHOICE. Choose Credit for MC) (3 pts per ques	e the one alternative that b tion, 21 pts pts total)	est completes the statem	ent or answers the q	mesmon: (140
	1) .Hydrocarbons containin A) alkane	g all single bonds and a	ring in their structural C) alkene	formulas are D) alkyne	1)
	A hydrocarbon that cont A) aromatic	ains one or more benzer B) alkene	ne rings must be classif C) alkane	ied as D) alkyne	2)
	3) .In organic molecules, a A) 3	carbon atom will norma B) 2	ally form how many bo C) 1	onds? D) 4	3)
	4) Hydrocarbons containin A) alkene	g only single bonds are B) alkyne	C) aromatic	D) alkane	4)
	5) What organic compound A) cyclooctane	d is represented by a hex B) benzene	ragon with a circle insi C) ethane	de? D) cyclohexane	5)
	6) Compounds that have the same molecular formula but different structural formulas are called structural, or constitutional				6)
	A) isomer	B) congeners	C) isotope	D) derivative	
	7) Hydrocarbons containir A) alkane	ng carbon-carbon triple l B) alkene	oonds are C) alkyne	D) aromatic	7)

- 1. Draw the structure of 1,3- dibromobenzene (Br substitutuent is bromo) (8 pts)
- 2. Name the following alkene (6 C alkane is hexane) (don't forget to number your molecule) (8 pts)

3. Show the product of the following reaction. (12 pts)

$$\begin{array}{c} \text{Pt} \\ \text{H--C=C--CH}_3 + 2 \text{ H}_2 \rightarrow \underline{\hspace{2cm}} \end{array}$$

4. Functional Groups:

A. Fill in the blank to match the structure & name. (A) benzene (B) Alkane (C) alkene (D) alkyne (8 pts, 2 pts each blank)

- B. Fill in the blank with the letter of the functional group. (8 pts, 2 pts each)
- (A) Alkyl halide R—X (B) Alcohol R—O—H (C) Amine R—NH₂
- (D) carboxylic acid R—C—O—H (E) Amide R—C—NHR' (F) ester R—C—O—R'

b. 1 mole of
$$K_3N = _____$$
 grams show work (6 pts)

- c. What is the molarity of a solution made by dissolving 7.2 moles of Na OH in water to make up 0.20 Liters of the sodium hydroxide solution? (Molarity = moles solute / liters of solution) (6 pts)
 - 5. Constitutional Isomer (15 pts, 5 pts each)
 - a. Show one constitutional isomer of the following molecule (5 pts)

b. Show one constitutional isomer of the following molecule (5 pts)

Exam III Physical Science (PS	C 102) Form B 10/24/18 M	9 am MWF Dr. Hann	Exam #	
Name	(print) Name			_(ngiz)
Please show work for partial or have no partial credit. Pleas grade it. (2 pts print AND sign Part I MULTIPLE CHOICE.	se write anything you want g n exam) ヒメセル。(Choose the one alternative	raded legibly. If I cannot $2Vedit - ex$ that best completes the s	otreadyourwork,Iobv amvedo	iously cannot
Partial Credit for MC) (3 pts p	per question, 21 pts pts total)		
1) Hydrocarbons coi A) alkene	Hydrocarbons containing carbon-carbon triple bonds are			1)
A) alkene	B) alkyne	C) aromatic	D) alkane	
2) .Hydrocarbons co A) alkene	ntaining all single bonds a B) alkyne	and a ring in their struc C) alkane	tural formulas are D) cycloalkane	2)
3) .In organic molec A) 1	ules, a carbon atom will n B) 2	ormally form how man C) 3	y bonds? D) 4	3)
4) What organic con	4) What organic compound is represented by a hexagon with a circle inside?			4)
A) ethane	B) benzene	C) cyclooctane	D) cyclohexane	-, <u></u>
	5) Compounds that have the same molecular formula but different structural formulas are called structural, or constitutional			
A) isotope	B) congeners	C) derivative	D) isomer	
6) Hydrocarbons cor A) alkene	ntaining only single bonds B) aromatic	are C) alkane	D) alkyne	6)
7) A hydrocarbon th	assified as	7)		
A) alkyne	B) alkene	C) alkane	D) aromatic	· /

- 1. Draw the structure of 1,4-dimethylbenzene (methyl substituent is CH₃—) (8 pts)
- 2. Name the following alkyne (4 C alkane is butane) (don't forget to number your molecule) (8 pts)

$$H \xrightarrow{H} C = C - C \xrightarrow{H} H$$

3. Show the product of the following reaction. (12 pts)

4. Functional Groups:

A. Fill in the blank to match the structure & name. (A) alkene (B) alkyne (C) benzene (D) Alkane (8 pts, 2 pts each blank)

- B. Fill in the blank with the letter of the functional group. (8 pts, 2 pts each)
- (A) Alkyl halide R—X (B) Alcohol R—O—H (C) Amine R—NH₂

Dr. Hahn Physical Science Lecture Exam III Fall 2018 9am Form B

1.a. 1 mole of **Fe** = _____ grams (6 pts)

- b. 1 mole of Na₂Se = grams show work (6 pts)
- c. What is the molarity of a solution made by dissolving 0.8 moles of Na OH in water to make up
- 23.8 Liters of the sodium hydroxide solution? (Molarity = moles solute / liters of solution) (6 pts)
- 2. Constitutional Isomer (15 pts, 5 pts each)
 - a. Show one constitutional isomer of the following molecule (5 pts)

b. Show one constitutional isomer of the following molecule (5 pts)

Exam III Physical Science (PSC 1	02) Form A 10/29/18 M 3	I1 am MWF Dr. Hahn	Exam#	_
Name	(print)	Name		_(sign)
Please show work for partial cred have no partial credit. Please w grade it. (2 pts print AND sign ex	vrite anything you want gr	id in some of the Short Araded legibly. If I cannot except the except the sound in the sound ind	ot read your work, I obv	ple choice questi riously cannot
Part I MULTIPLE CHOICE. CI Partial Credit for MC) (3 pts per		that best completes the s	tatement or answers the	question. (No
1) What organic compo	1) What organic compound is represented by a hexagon with a circle inside?			
A) ethane	B) cyclohexane	C) benzene	D) cyclooctane	
called structural, or o				2)
A) isotope	B) derivative	C) congeners	D) isomer	
3) .Hydrocarbons conta A) alkene	ining all single bonds a B) alkane	nd a ring in their struc C) alkyne	tural formulas are D) cycloalkane	3)
4) Hydrocarbons contai	4) Hydrocarbons containing carbon-carbon triple bonds are			
A) aromatic	B) alkyne	C) alkene	D) alkane	,
5) .In organic molecule	5) In organic molecules, a carbon atom will normally form how many bonds?			
A) 1	B) 4	C) 2	D) 3	
6) Hydrocarbons contai	6) Hydrocarbons containing only single bonds are			
A) alkane	B) alkyne	C) aromatic	D) alkene	
7) A hydrocarbon that o	7) A hydrocarbon that contains one or more benzene rings must be classified as			
A) alkyne	B) aromatic	C) alkane	D) alkene	7)

- 1. Draw the structure of 1,2-dichlorobenzene (chloro substituent is Cl) (8 pts)
- 2. Name the following alkyne (5 C alkane is pentane) (don't forget to number your molecule) (8 pts)

3. Show the product of the following reaction. (12 pts)

4. Functional Groups:

A. Fill in the blank to match the structure & name. (A) Alkane (B) alkene (C) alkyne (D) benzene (8 pts, 2 pts each blank)

- B. Fill in the blank with the letter of the functional group. (8 pts, 2 pts each)
- (A) Alkyl halide R—X (B) Alcohol R—O—H (C) Amine R—NH₂

(D) carboxylic acid
$$R$$
— C — O — H (E) Amide R — C — NHR ' (F) ester R — C — O — R '

- a. 1 mole of Sr = grams (6 pts)
- b. 1 mole of CaBr2 = ____ grams show work (6 pts)

c. What is the molarity of a solution made by dissolving 4.2 moles of Na OH in water to make up 7.2 Liters of the sodium hydroxide solution? (Molarity = moles solute / liters of solution) (6 pts)

- 2. Constitutional Isomer (15 pts, 5 pts each)
- a. Show one constitutional isomer of the following molecule (5 pts)

b. Show one constitutional isomer of the following molecule (5 pts)

Exam l	III Physical Science (PSC 10	2) Form B 10/29/18 M 1	1 am MWF Dr. Hahn	Exam #	-
Name_		(print)	Name		_(sign)
have n grade i	show work for partial credit o partial credit. Please wr it. (2 pis print AND sign exa	ite anything you want gi ^{m)} セメナル、C <i>CCの</i>	raded legibly. If I canno Lit - Exam Ve	do Green	iously cannot
Part I Partial	MULTIPLE CHOICE. Cho Credit for MC) (3 pts per q	oose the one alternative uestion, 21 pts pts total)	that best completes the st	atement or answers the	question. (No
	1) A hydrocarbon that co	ontains one or more be B) alkyne	enzene rings must be cla C) aromatic	ssified as D) alkane	1)
	2) .Hydrocarbons contain A) alkene	ning all single bonds a B) alkane	ind a ring in their structi C) cycloalkane	ıral formulas are D) alkyne	2)
	3) Compounds that have called structural, or contains A) isomer		ormula but different stra C) congeners	nctural formulas are D) isotope	3)
	4) Hydrocarbons contain A) alkene	ning carbon-carbon tri B) aromatic	ple bonds are C) alkyne	D) alkane	4)
	5) What organic compor A) cyclooctane	and is represented by a B) ethane	hexagon with a circle of C) cyclohexane	inside? D) benzene	5)
	6) In organic molecules A) 2	, a carbon atom will in B) 4	ormally form how many C) 1	y bonds? D) 3	6)
	7) Hydrocarbons contain A) alkene	ning only single bonds B) aromatic	are C) alkyne	D) alkane	7)

- 1. Draw the structure of 1,4-diethylbenzene (ethyl substituent is CH₃CH₂—) (8 pts)
- 2. Name the following alkene (4 C alkane is butane) (don't forget to number your molecule) (8 pts)

3. Show the product of the following reaction. (12 pts)

4. Functional Groups:

A. Fill in the blank to match the structure & name. (A) Alkane (B) alkene (C) alkyne (D) benzene (8 pts, 2 pts each blank)

- B. Fill in the blank with the letter of the functional group. (8 pts, 2 pts each)
- (A) Alkyl halide R—X (B) Alcohol R—O—H (C) Amine R—NH₂

- 1. a. 1 mole of **Ba** = _____ grams (6 pts)
 - b. 1 mole of AlCl₃ = _____ grams show work (6 pts)
 - e. What is the molarity of a solution made by dissolving 1.9 moles of Na OH in water to make up
 4.2 Liters of the sodium hydroxide solution? (Molarity = moles solute / liters of solution) (6 pts)
- 2. Constitutional Isomer (15 pts, 5 pts each)
- a. Show one constitutional isomer of the following molecule (5 pts)

b. Show one constitutional isomer of the following molecule (5 pts)