

Carburanti per autoveicoli c)

Il particolato atmosferico c)

Tecniche spettrofotometriche c)

Trattamento rifiuti solidi urbani b)

Principali costituenti degli alimenti b)

Biotecnologie b)

La chimica nella ricerca di energie alternative a)

Processi catalitici a)

Plastiche riciclabili a)

SECONDA PROVA

Potabilizzazione delle acque c)

Additivi alimentari c)

Processi enzimatici c)

Metalli e loro composti nella sintesi b)

Professionalità del chimico nell'industria farmaceutica b)

Coloranti dell'industria tessile .b)

Strumentazione di base nei laboratori di analisi e ricerca a)

Metodi di produzione dell'acido solforico a)

Tecniche spettrofotometriche e spettroscopiche a)



UNIVERSITÀ
DEGLI STUDI
FIRENZE

DIPARTIMENTO
DI CHIMICA
"UGO SCHIFF"

PROVA PRATICA

Prova Pratica
Esami di Stato sessione giugno 2014
Aula 17 Plesso Didattico Polo Scientifico e Tecnologico
Di Sesto F.no
Via Bernardini n.6
27 giugno 2014 ore 10,00
Sez. B

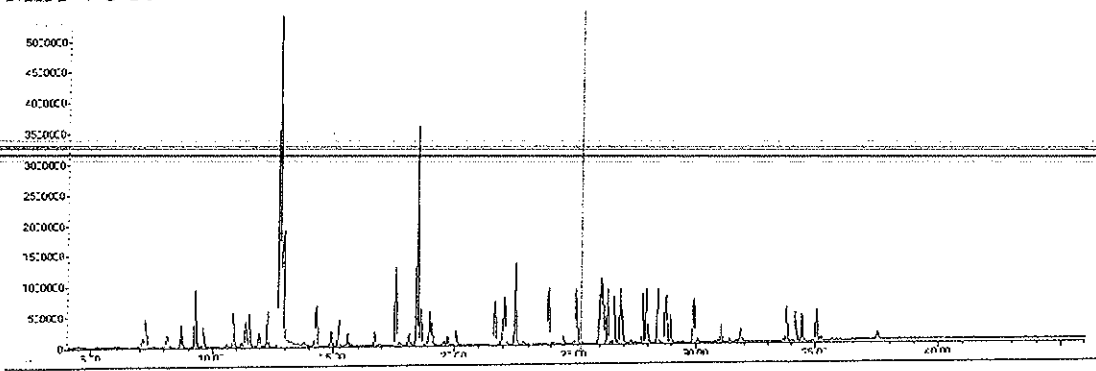
Esercizio 1) Assegnare la formula del composto organico in esame sulla base degli spettri IR, UV-Vis, $^1\text{H-NMR}$, e Massa allegati. Descrivere brevemente gli spettri

Esercizio 2) Rispondere ai quesiti riportati sul cromatogramma, basandosi sui dati dell'allegato.

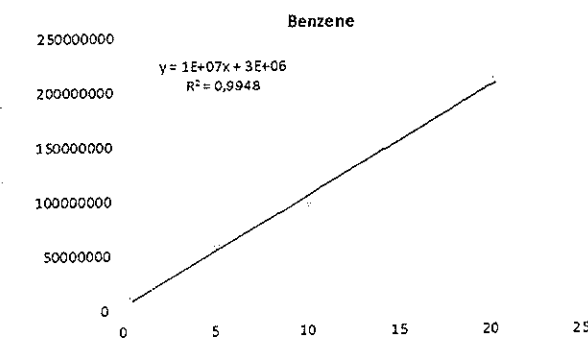
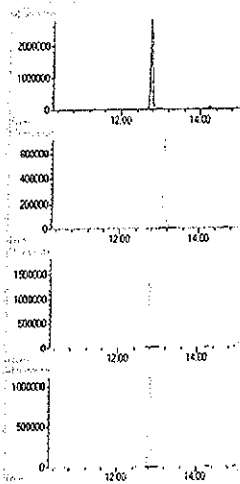
Esercizio 3) Attribuire una scala di acidità introducendo negli spazi sottostanti alle formule un numero che rappresenta la posizione del composto sopra riportato in scala di acidità secondo Bronsted. Nell'esercizio D Riportare invece la scala della basicità.

Esercizio 4) Sono riportate le formule di prodotti provenienti da condensazioni aldoliche. Per ognuna di esse individuare il donatore e l'accettore di ciascuna reazione, scegliendo fra i composti riportati in fondo alla pagina A- H

MIX VOCs EPA

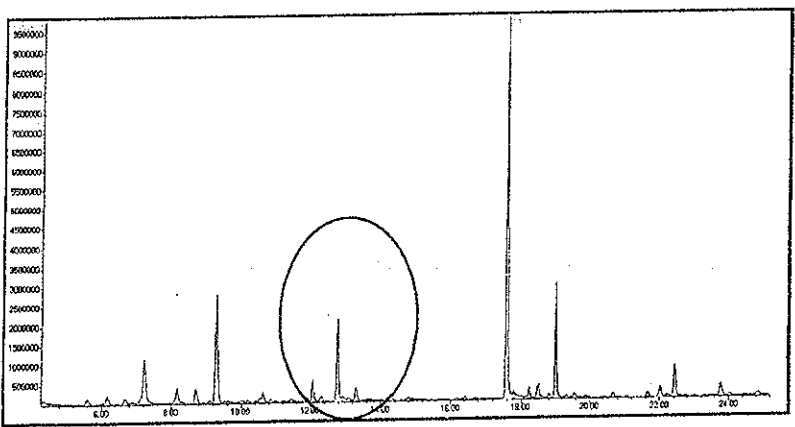


Range di Calibrazione Benzene: :20 ng/μL – 0,5 ng/μL



ng/μL	0,5	5	10	20
Benzene	11264691	56466404	95638124	210263379

$y = 10^7 x + 3 \cdot 10^6$
 \downarrow
 $86'047448 = 10^7 x + 3 \cdot 10^6$
 $x = \frac{86'047448 - 3 \cdot 10^6}{10^7}$
 $\frac{86'047448 - 3'000'000}{10^7}$



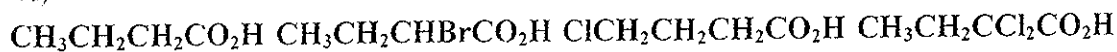
Area	86047448	Flusso Campionamento	500 mL/min
Volume iniettato	1 μL	m³ aria campionata	
Volume campione	1 mL	Concentrazione analita nel campione (mg/m³)	
Tempo campionamento	20 min		

Relative Strength of Bronsted Acids

In each of the following sections four compounds are listed. In the box under each formula enter a number (1 to 4) indicating the order of acid strength (1 is strongest & 4 is weakest).

Note that C_6H_5- represents a phenyl group. *pi forte* *pi debole*

(A)



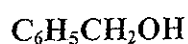
4

2

3

1

(B)



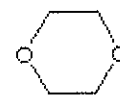
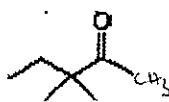
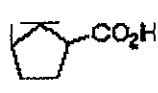
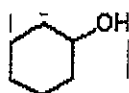
4

2

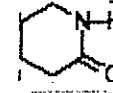
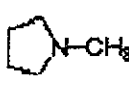
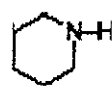
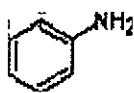
2

3

(C)



(D)



Check Answer

Clear

View Answers

pKa Table

For a brief discussion of each problem click the appropriate button:

A

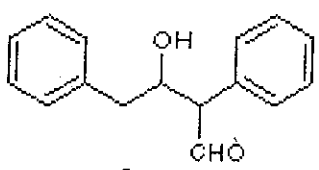
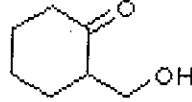
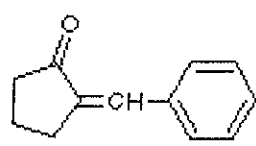
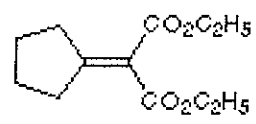
B

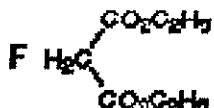
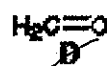
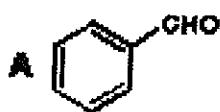
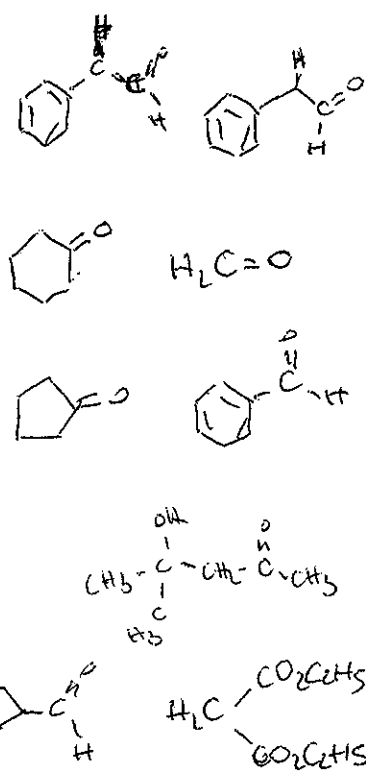
C

D

Aldol Condensation

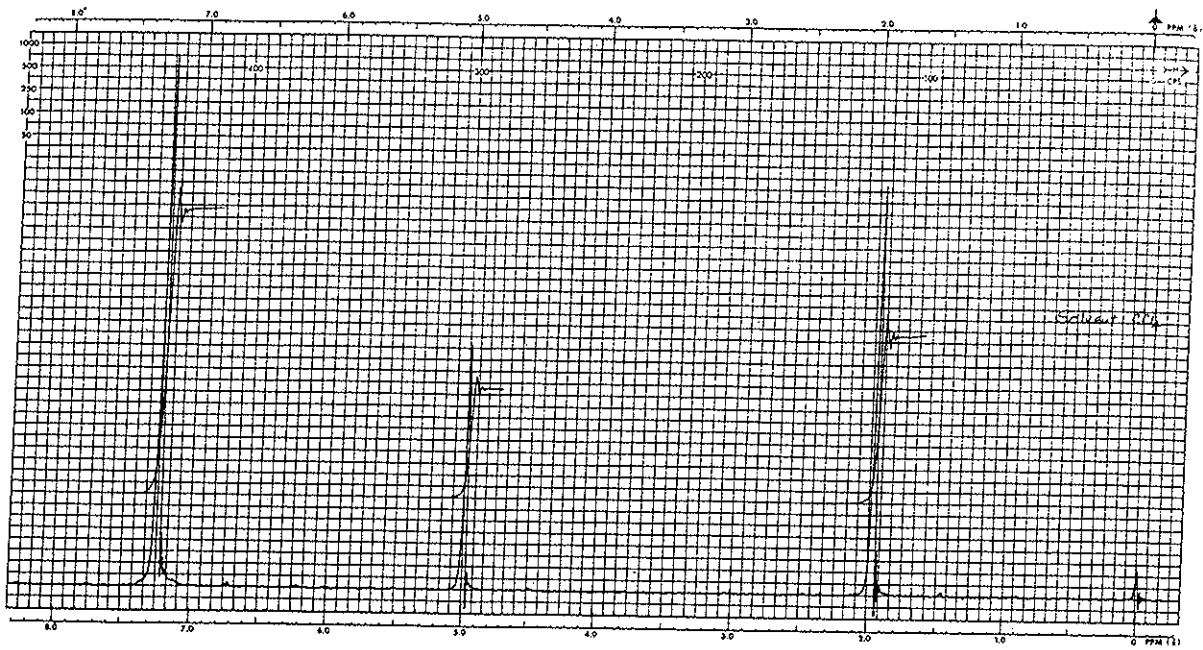
Aldol Condensation proceeds by carbon-carbon bond formation between an enolate donor and a carbonyl acceptor. For each of the following aldol products (1 through 5) select a donor and an acceptor compound from the list at the bottom of the page (compounds A through H). Enter the letter corresponding to your selection in the appropriate answer box.

	Aldol Product	Donor	Acceptor
1.		<input type="text" value="C"/>	<input type="text" value="A"/>
2.		<input type="text" value="E"/>	<input type="text" value="D"/>
3.		<input type="text" value="B"/>	<input type="text" value="A"/>
4.	$(CH_3)_2C(OH)CH_2COCH_3$	<input type="text" value="G"/>	<input type="text" value="G"/>
5.		<input type="text" value="F"/>	<input type="text" value="H"/>



This script written by William Reusch, Dept. of Chemistry, Michigan State University. Please send comments and corrections to whreusch@pilot.msu.edu.

NMR SPECTRUM (Solvent CCl₄, 60 MHz)



16 10 14