

10.1 Fundamentals of Organic Chemistry

Question Paper

Course	DPIB Chemistry
Section	10. Organic Chemistry
Topic	10.1 Fundamentals of Organic Chemistry
Difficulty	Easy

Time allowed: 20
Score: /10
Percentage: /100

Question 1

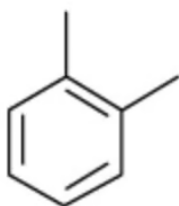
Which pairs of homologous series do **not** have the same C:H ratio in their general formulae?

- A aldehydes and ketones
- B alkanes and alkenes
- C carboxylic acids and esters
- D alkenes and aldehydes

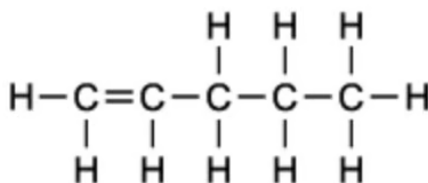
[1 mark]

Question 2

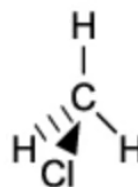
Which of the following molecules are hydrocarbons?



1



2



3



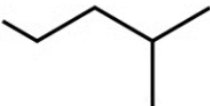
4

- A All
- B 1 and 2
- C 1, 2 and 3
- D 4 only

[1 mark]

Question 3

What is the correct formula for 1-fluoro-3-methylbut-2-ene?

A	Molecular	$\text{CH}_2\text{FCH}_2\text{C}(\text{CH}_3)\text{CH}_3$
B	Empirical	$\text{C}_5\text{H}_9\text{F}$
C	Displayed	$ \begin{array}{ccccccc} & & & \text{H} & \text{H} & \text{H} & \\ & & & & & & \\ \text{H} & - & \text{C} = & \text{C} - & \text{C} - & \text{C} - & \text{C} - \text{F} \\ & & & & & & \\ & & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \end{array} $
D	Skeletal	

[1 mark]

Question 4

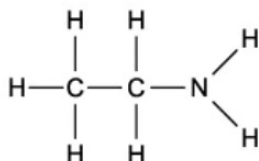
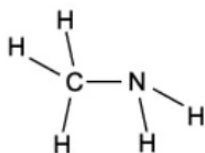
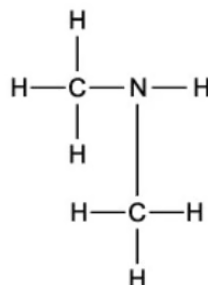
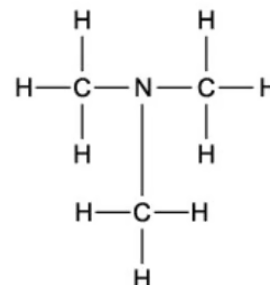
Considering **only** structural isomers, what is the number of alcohols of each type with the formula $\text{C}_5\text{H}_{12}\text{O}$?

	primary	secondary	tertiary
A	3	3	2
B	4	2	2
C	4	3	1
D	5	2	1

[1 mark]

Question 5

Which of the following is the displayed formula for ethylamine?

A

B

C

D


[1 mark]

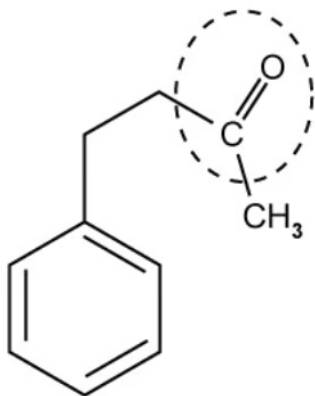
Question 6

 Identify which of the hydrocarbons shown below does **not** belong in the same homologous series as the other compounds


[1 mark]

Question 7

Identify the functional group that is ringed in the molecule shown below:

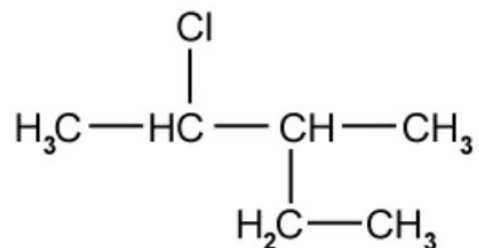


- A hydroxyl
- B carboxyl
- C ether
- D carbonyl

[1 mark]

Question 8

What is the IUPAC name of the following molecule?

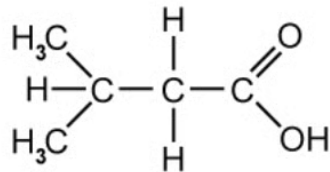


- A** 2-chloro-3-ethylbutane
- B** 3-methyl-4-chloropentane
- C** 2-ethyl-3-chlorobutane
- D** 2-chloro-3-methylpentane

[1 mark]

Question 9

What is the IUPAC name of the following molecule?



- A** 3,3-dimethylpropanoic acid
- B** 1,1-dimethylpropanoic acid
- C** 3-methylbutanoic acid
- D** 2-methylbutanoic acid

[1 mark]

Question 10

Which of the halogenoalkanes shown contains a secondary carbon atom?

- A** $(\text{CH}_3)_2\text{CHCH}_2\text{Cl}$
- B** $\text{CH}_3(\text{CH}_2)_3\text{CH}_2\text{Cl}$
- C** $(\text{CH}_3)_3\text{CCl}$
- D** $\text{CH}_3\text{CHClCH}_2\text{CH}_3$

[1 mark]