

10.1 Fundamentals of Organic Chemistry

Question Paper

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

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

Question 1

How many structural isomers are there of tribromopropane, $C_3H_5Br_3$?

- A** 4 **B** 5 **C** 6 **D** 7

[1 mark]

Question 2

How many isomeric esters have the molecular formula $C_5H_{10}O_2$?

- A** 4 **B** 5 **C** 9 **D** 7

[1 mark]

Question 3

Which features about the members of a homologous series are correct?

- I. all members have the same general formula
- II. the members have similar chemical properties
- III. the members show a gradual change in physical properties

- A** I and II only
B I and III only
C II and III only
D I, II and III

[1 mark]

Question 4

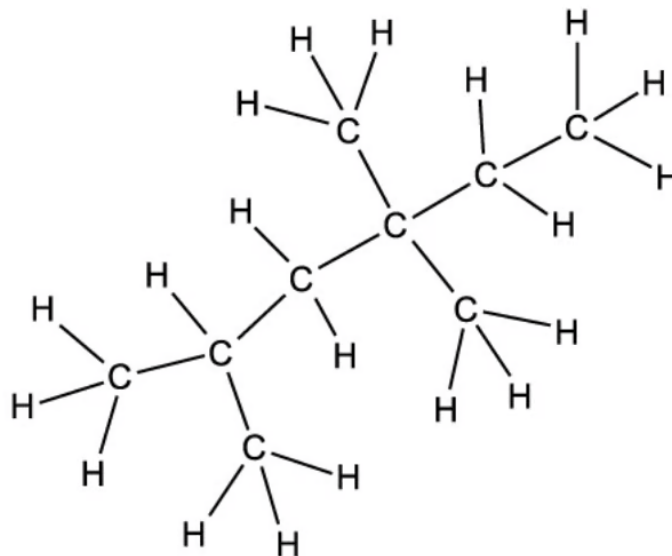
Octane is a component of petrol or gasoline. Which of the following molecules could be an isomer of octane?

- A** $\text{CH}_3\text{CH}_2\text{CHCHCHCH}_2(\text{CH}_3)_2$
- B** $(\text{CH}_3)_2\text{CHCH}(\text{CH}_2)_2(\text{CH}_3)_2$
- C** $\text{CH}_3(\text{CH}_2)_5\text{CH}_3$
- D** $\text{CH}_3\text{CHCHCH}(\text{CH}_2)_2(\text{CH}_3)_2$

[1 mark]

Question 5

Give the name of the following molecule



- A 2,4,4,4-trimethylethylbutane
- B 3,3,5-trimethylhexane
- C 2,4,4-trimethylhexane
- D 1,1,3,3-tetramethylpentane

[1 mark]

Question 6

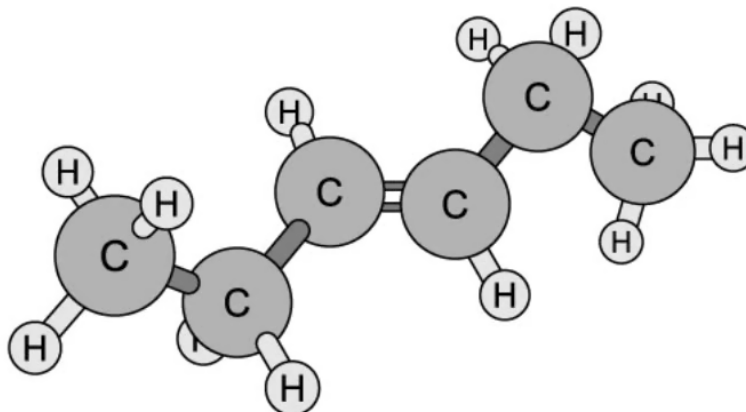
How many branched-chain isomers are there which have the molecular formula C_5H_{12} ?

- A 2
- B 3
- C 4
- D 5

[1 mark]

Question 7

Study the diagram below and determine which of the three statements are correct



- I. A suitable name is hex-4-ene
- II. The empirical formula is CH_2
- III. It is an isomer of cyclohexane

- A** I and II only
- B** I and III only
- C** II and III only
- D** I, II and III

[1 mark]

Question 8

Which of the molecules shown below contains an aldehyde functional group?

- A $\text{CH}_3\text{CH}_2\text{CH}_2\text{OOCH}_3$
- B $\text{CH}_3\text{CH}_2\text{CH}_2\text{COCH}_3$
- C $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$
- D $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CHO}$

[1 mark]

Question 9

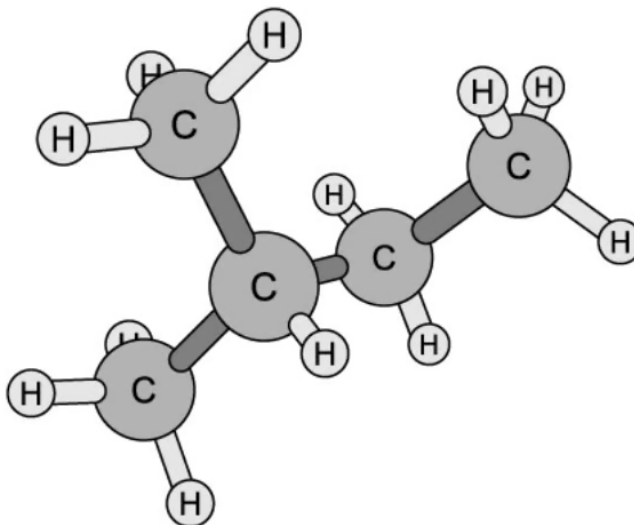
Which of the halogenoalkanes shown below contains a tertiary carbon atom?

- A $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$
- B $\text{CH}_3\text{CH}_2\text{CH}(\text{CH}_3)\text{Br}$
- C $\text{C}(\text{CH}_3)_3\text{Cl}$
- D $\text{CH}_3\text{CHBrCH}_2\text{CH}_3$

[1 mark]

Question 10

What would be the name of the following compound using IUPAC rules?



- A** pentane
- B** ethylpropane
- C** 2-methylbutane
- D** 3-methylbutane

[1 mark]