

SLE155 Chemistry for the Professional Sciences

Burwood and Geelong



**DEAKIN
COLLEGE**

in association with

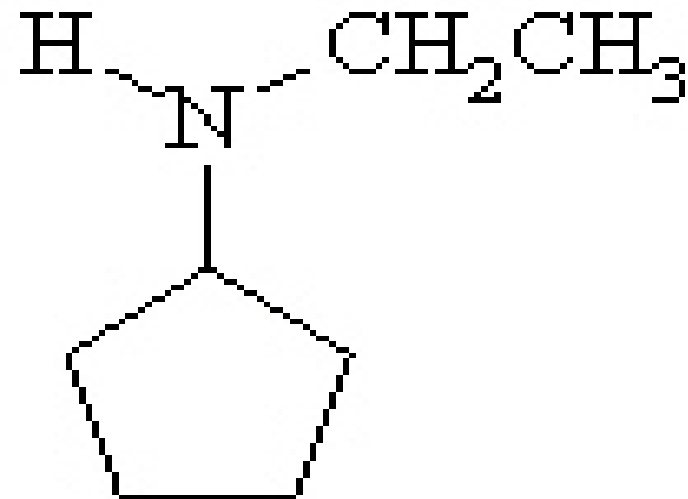


Q 1

The name of the following compound is N-cyclopentylethanamine.

a. True

***b. False**

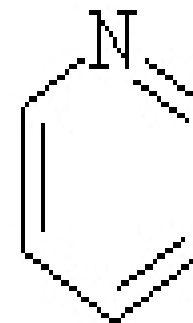
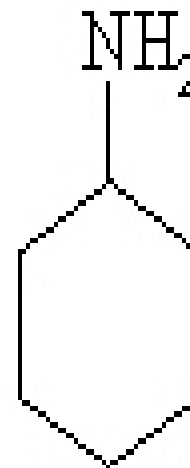
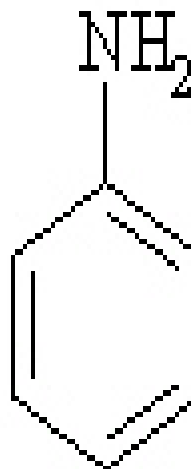


Q 2

The strongest base in the following group is aniline.

a. True

*b. False



Q 3

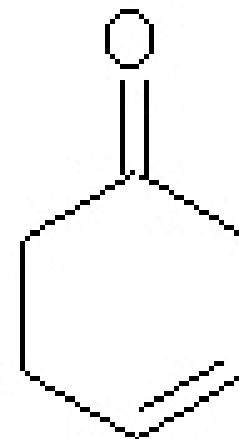
Aromatic amines are weaker bases than aliphatic amines.

*a. True

b. False

Q 4

The name of the following compound is 3-cyclohexenone.



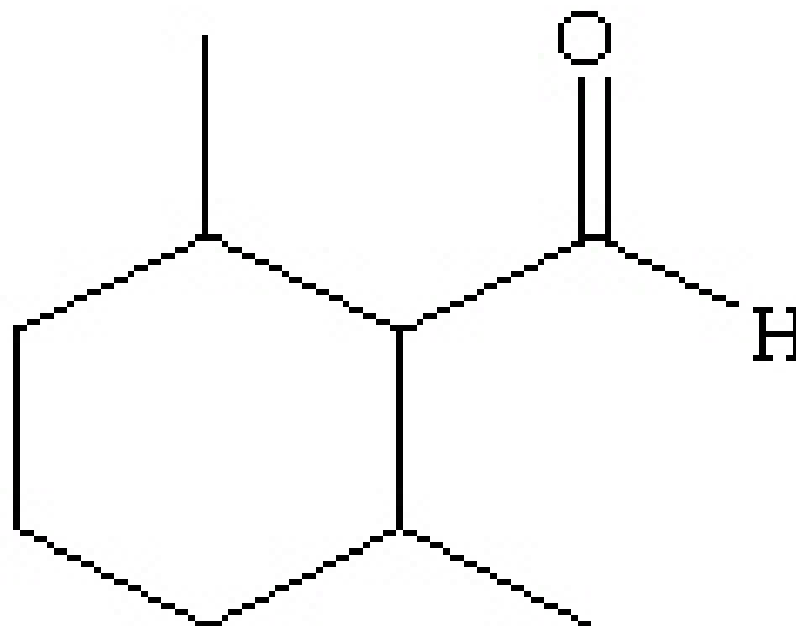
- *a. True
- b. False

Q 5

The name of the following molecule is 1,5-cyclohexanecarbaldehyde.

a. True

***b. False**



Q 6

The common name for propanone is acetone.

***a. True**

b. False

Q 7

The product of the reaction of hexanal with chromic acid is hexanoic acid.

***a. True**

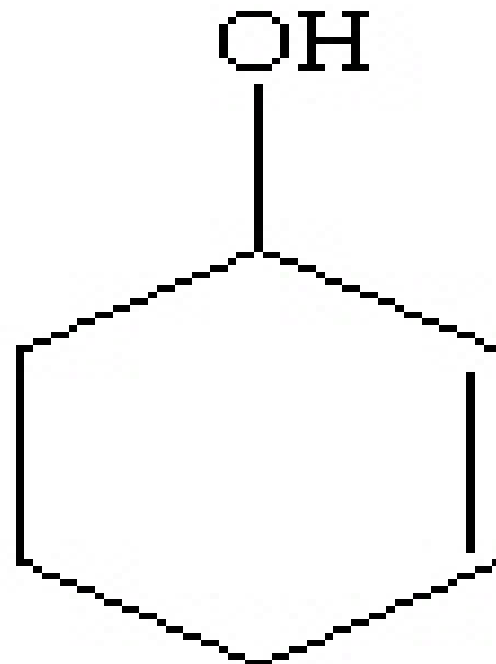
b. False

Q 8

The enol form of cyclohexanone is:

a. True

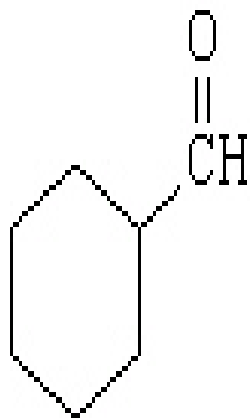
***b. False**



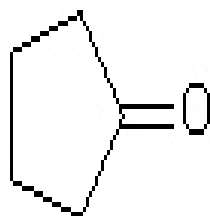
Q 8

Arrange the compounds in order of increasing boiling point (lowest first).

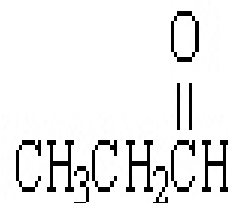
- *a. III, II, I, IV
- b. IV, I, II, III
- c. IV, III, II, I
- d. II, II, I, IV



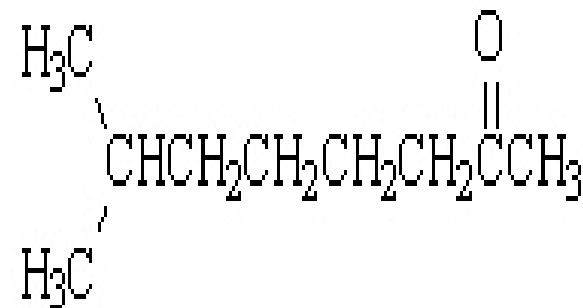
I



II



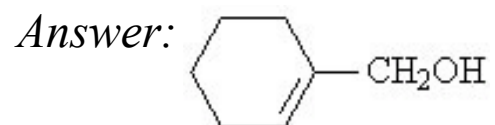
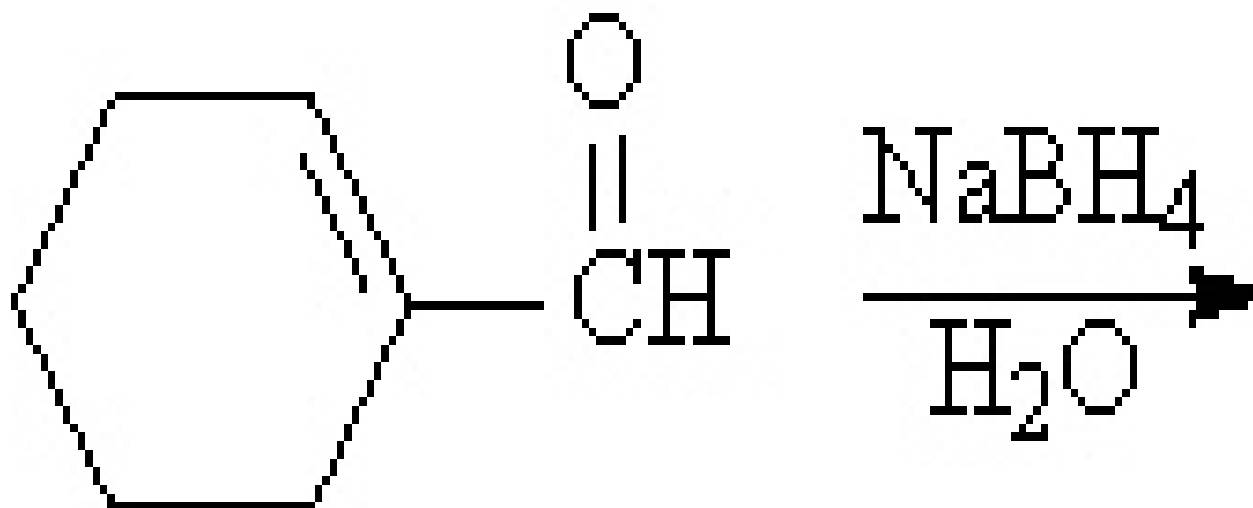
III



IV

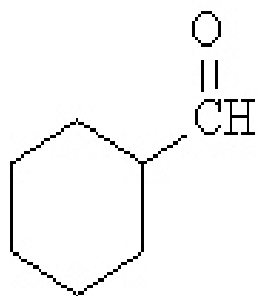
Q 9

Which is the major product of the following reaction?

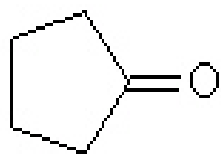


Q 10

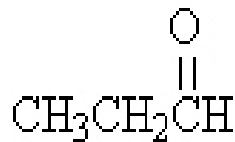
Arrange the compounds in order of increasing solubility in water (least first).



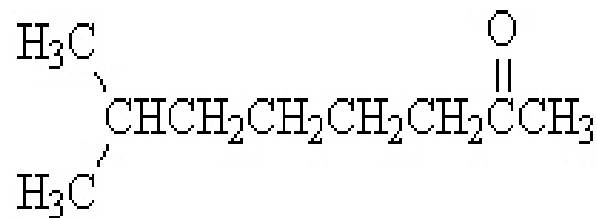
I



II



III



IV

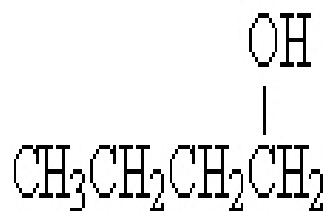
- *a. IV, I, II, III
- b. I, II, III, IV
- c. IV, III, II, I
- d. II, II, I, IV

Q 11

Arrange the compounds in order of increasing boiling point (lowest first).



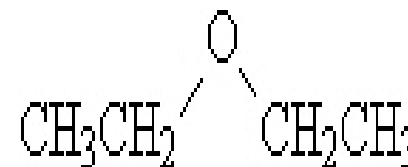
I



II



III

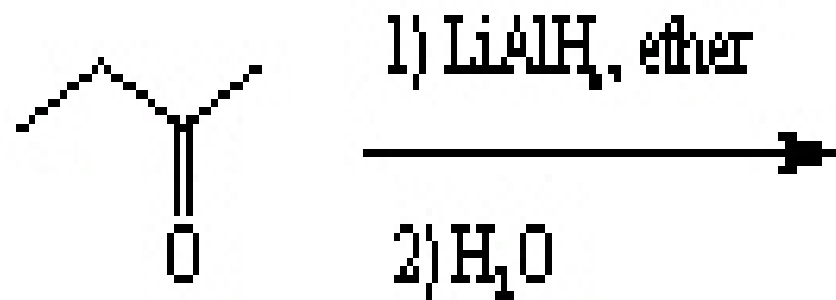


IV

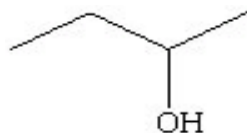
- a. II, I, IV, III
- b. I, II, IV, III
- c. II, I, IV, III
- *d. III, IV, I, II

Q 12

The major product of the following reaction is:



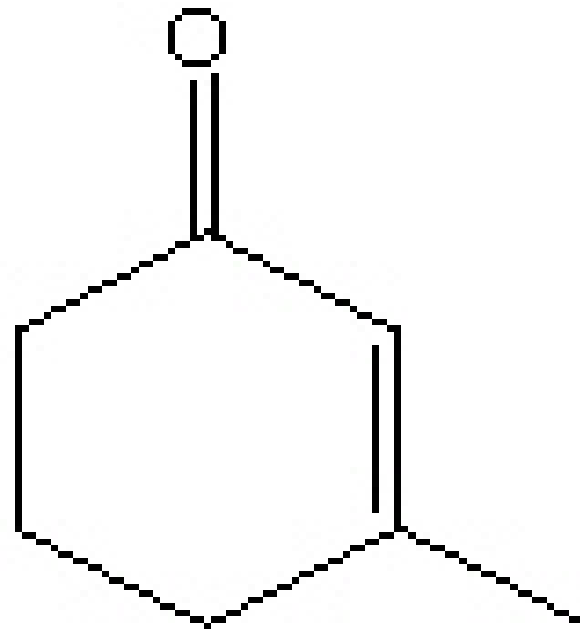
Answer



Q 13

What is the IUPAC name for the following compound?

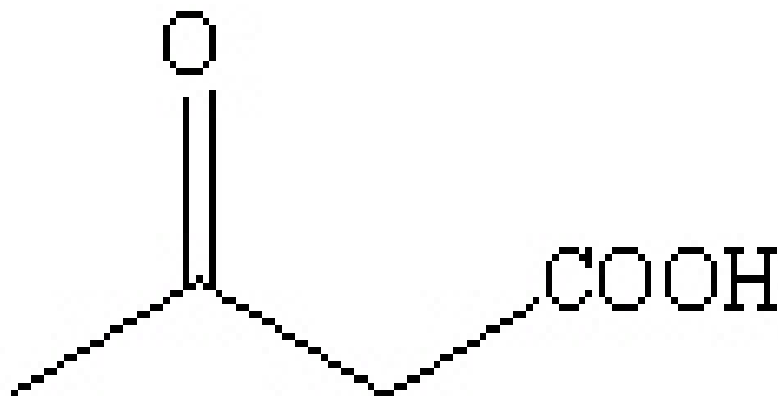
- *a. 3-methyl-2-cyclohexenone**
- b. 2-methyl-2-cyclohexenone**
- c. 2-methyl-2-cyclohexanone**
- d. 3-methyl-2-cyclohexanone**



Q 14

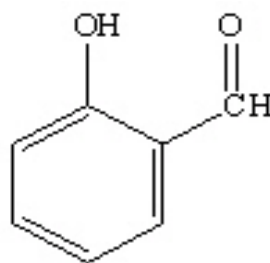
What is the IUPAC name for the following structure?

- a. 2-oxopropanoic acid**
- b. 2-oxobutanoic acid**
- *c. 3-oxobutanoic acid**
- d. 3-oxopropanoic acid**



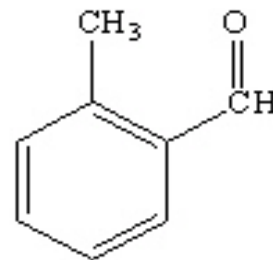
Q 15

Which compounds are named correctly?



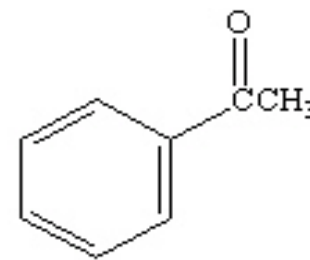
o-hydroxybenzaldehyde

I



2-methylbenzaldehyde

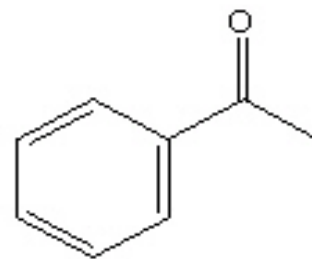
II



benzophenone

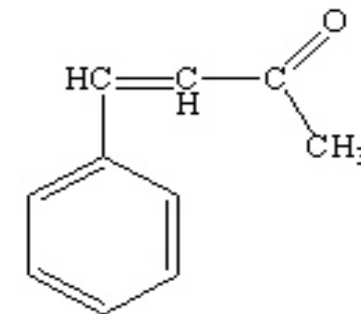
III

- a. I, II, III
- *b. IV, II, I
- c. II, I, IV
- d. III, V, II



acetophenone

IV



cinnamaldehyde

V

Q 16

Arrange the compounds in order of increasing boiling point (lowest first).

I. propionic acid II. 1-butanol III. butanal IV. 2-butanone

a. I, II, III, IV

b. II, I, III, IV

c. IV, II, III, I

*d. III, IV, II, I

Q 17

How can aldehydes be formed from alcohols?

Answer below:

Primary alcohols can be oxidised under mild conditions to give aldehydes. PCC is a mild oxidising agent that will oxidise primary alcohols to aldehydes, but will not further oxidise them to carboxylic acids.

Q 18

How are ketones oxidised to carboxylic acids?

Answer below:

Ketones are much more resistant to oxidation than aldehydes. For examples, ketones are not normally oxidised by chromic acid or potassium permanganate. Ketones undergo oxidative cleavage *via* their enol form, using potassium dichromate and potassium permanganate at higher temperatures, as well as by higher concentrations of nitric acid.