

12. A student investigated four different substances in the solid phase. The table below is a record of the characteristics (marked with an *X*) exhibited by each substance.

Characteristic Tested	Substance A	Substance B	Substance C	Substance D
High Melting Point	<i>X</i>		<i>X</i>	
Low Melting Point		<i>X</i>		<i>X</i>
Soluble in Water	<i>X</i>			<i>X</i>
Insoluble in Water		<i>X</i>	<i>X</i>	
Decomposed under High Heat	<i>X</i>			
Stable under High Heat	<i>X</i>		<i>X</i>	<i>X</i>
Electrolyte	<i>X</i>			<i>X</i>
Nonelectrolyte		<i>X</i>	<i>X</i>	

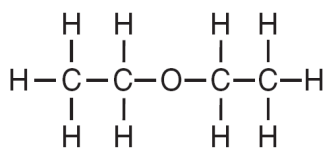
Which substance has characteristics most like those of an organic compound?

- A) *A* B) *B* C) *C* D) *D*

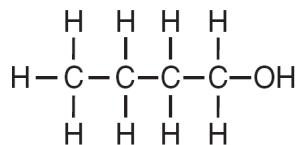
13. Which statement explains why the element carbon forms so many compounds?

- A) Carbon atoms combine readily with oxygen.
 B) Carbon atoms have very high electronegativity.
 C) Carbon readily forms ionic bonds with other carbon atoms.
D) Carbon readily forms covalent bonds with other carbon atoms.

14. Given the formulas for two compounds:



and



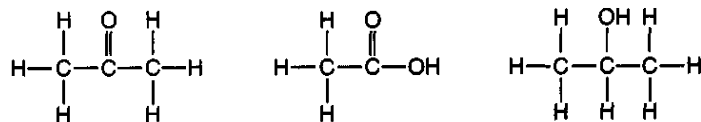
These compounds differ in

- A) gram-formula mass
 B) molecular formula
 C) percent composition by mass
D) physical properties at STP

15. Which two compounds are isomers of each other?

- A) $\text{CH}_3\text{CH}_2\text{COOH}$ and $\text{CH}_3\text{COOCH}_2\text{CH}_3$
B) $\text{CH}_3\text{CH}_2\text{CHO}$ and CH_3COCH_3
 C) $\text{CH}_3\text{CHBrCH}_3$ and $\text{CH}_2\text{BrCHBrCH}_3$
 D) $\text{CH}_3\text{CHOHCH}_3$ and $\text{CH}_3\text{CHOHCH}_2\text{OH}$

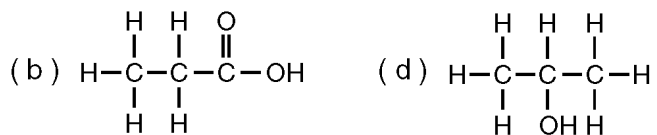
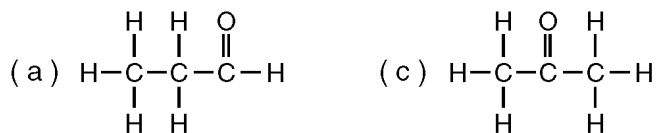
16. Given the three organic structural formulas shown below:



Which organic compound classes are represented by these structural formulas, as shown from left to right?

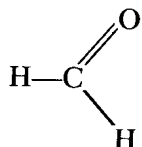
- A) ester, organic acid, ketone
 B) ester, aldehyde, organic acid
 C) ketone, aldehyde, alcohol
D) ketone, organic acid, alcohol

17. Given the formulas of four organic compounds:



Which pair below contains an alcohol and an acid?

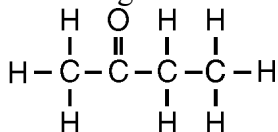
- A) *a* and *b* B) *a* and *c*
 C) ***b* and *d*** D) *c* and *d*



18. Which is represented by the structural formula above?

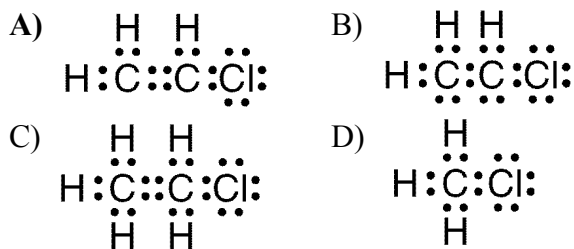
- A) **an aldehyde** B) an alcohol
 C) an alkane D) an acid

19. What is the IUPAC name of the compound with the following structural formula?

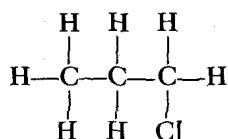


- A) propanone B) propanal
 C) **butanone** D) butanal

20. Which Lewis electron-dot diagram represents chloroethene?



21. What is the correct IUPAC name of the following compound?

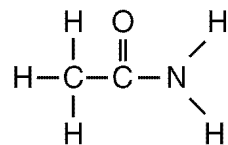


- A) ethane B) propane
 C) 3-chloropropane D) **1-chloropropane**

22. The compound $\text{CH}_3\text{CH}_2\text{COOCH}_3$ is an example of

- A) **an ester** B) an alcohol
 C) an acid D) a polymer

23. Given the structural formula:



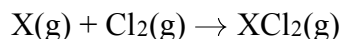
This compound is classified as an

- A) **amide** B) amine
 C) aldehyde D) alcohol

24. Which formula represents an ether?

- A) $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{CH}_3$ B) $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{OH}$
 C) $\text{CH}_3-\text{O}-\text{CH}_3$ D) CH_3-OH

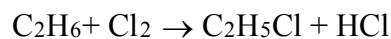
25. Given the incomplete equation representing an organic addition reaction:



Which compound could be represented by X?

- A) CH_4 **B) C_2H_4** C) C_3H_8 D) C_4H_{10}

26. Given the equation:



This reaction is best described as

- A) addition involving a saturated hydrocarbon
 B) addition involving an unsaturated hydrocarbon
 C) **substitution involving a saturated hydrocarbon**
 D) substitution involving an unsaturated hydrocarbon

27. Molecules of propene combine in a chemical reaction to produce a large single molecule. This reaction is called

- A) substitution B) fermentation
 C) **polymerization** D) esterification

28. Which equation represents an esterification reaction?

- A) $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2 \text{C}_2\text{H}_5\text{OH} + 2 \text{CO}_2$
 B) $\text{C}_5\text{H}_{10} + \text{H}_2 \rightarrow \text{C}_5\text{H}_{12}$
 C) $\text{C}_3\text{H}_8 + \text{Cl}_2 \rightarrow \text{C}_3\text{H}_7\text{Cl} + \text{HCl}$
 D) **$\text{HCOOH} + \text{CH}_3\text{OH} \rightarrow \text{HCOOCH}_3 + \text{HOH}$**

29. Which reaction produces ethyl alcohol as one of the principal products?

- A) an esterification reaction
- B) a neutralization reaction
- C) a saponification reaction
- D) a fermentation reaction**

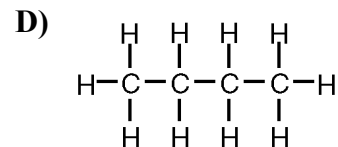
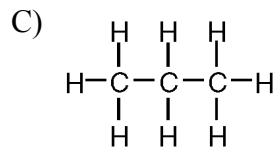
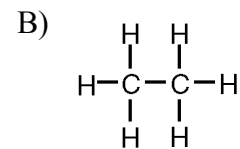
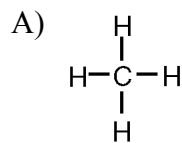
30. Which products are obtained when $\text{CH}_4(\text{g})$ burns completely in an excess of oxygen?

- A) CO and H_2O
- B) CO and C
- C) CO_2 and H_2O**
- D) CO_2 and CO

31. Which is a product of the hydrolysis of an animal fat by a strong base?

- A) water
- B) gasoline
- C) soap**
- D) toluene

32. Which compound has an isomer?



Answer Key
Do now Unit 12 Organic Chemistry

1. **B**
 2. **D**
 3. **C**
 4. **D**
 5. **A**
 6. **B**
 7. **C**
 8. **D**
 9. **D**
 10. **A**
 11. **D**
 12. **B**
 13. **D**
 14. **D**
 15. **B**
 16. **D**
 17. **C**
 18. **A**
 19. **C**
 20. **A**
 21. **D**
 22. **A**
 23. **A**
 24. **C**
 25. **B**
 26. **C**
 27. **C**
 28. **D**
 29. **D**
 30. **C**
 31. **C**
 32. **D**
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