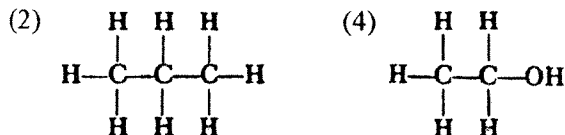
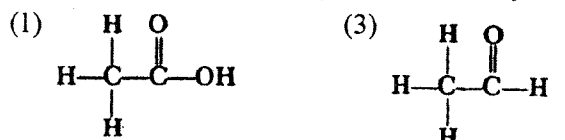


Organic Molecules Exam

1. Which structural formula represents an aldehyde?



2. A molecule of ethane and a molecule of ethene both have the same

- (1) empirical formula
 (2) molecular formula
 (3) number of carbon atoms
 (4) number of hydrogen atoms

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

- (1) an ester (3) an acid
 (2) an alcohol (4) a polymer

4. The IUPAC name of an aldehyde has the ending

- (1) -ol (3) -oate
 (2) -al (4) -oic

5. In which compound does a double covalent bond exist between two carbon atoms?

- (1) C_2H_2 (3) C_3H_8
 (2) C_2H_4 (4) C_4H_{10}

6. Which compound is an ester?

- (1) CH_3COOH (3) $\text{CH}_3\text{COOCH}_3$
 (2) CH_3CHO (4) CH_3COCH_3

7. The product of a reaction between a hydrocarbon and chlorine was 1,2-dichloropropane. The hydrocarbon must have been

- (1) C_5H_{10} (3) C_3H_6
 (2) C_2H_4 (4) C_4H_8

8. Which of the following hydrocarbons has the lowest normal boiling point?

- (1) ethane (3) butane
 (2) propane (4) pentane

9. Which molecular formula can be represented by the structural formula shown below?



- (1) C_6H_6 (3) C_6H_{12}
 (2) C_6H_{10} (4) C_6H_{14}

10. Which organic compound is most soluble in water?

- (1) ethyne (3) butane
 (2) benzene (4) ethanol

11. Which diagram may be used to represent a benzene ring?



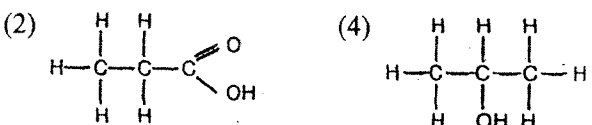
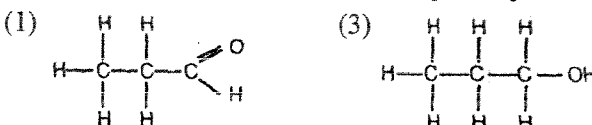
12. An example of a ketone is

- (1) propanone (3) propanal
 (2) propane (4) propanol

13. As the number of carbon atoms in a hydrocarbon molecule increases, the number of possible isomers generally

- (1) decreases (3) remains the same
 (2) increases

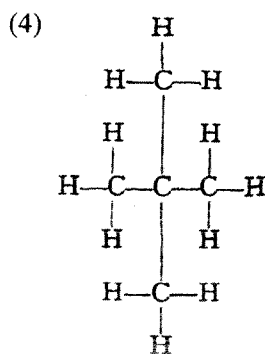
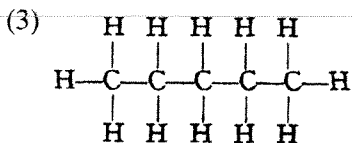
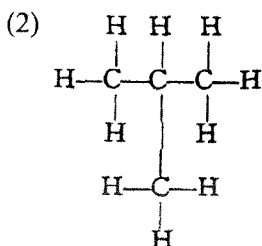
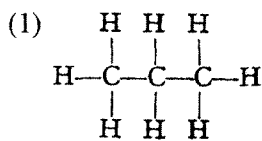
14. Which structural formula represents a primary alcohol?



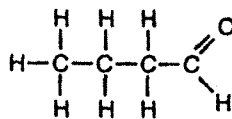
15. Which type of bond occurs in a saturated hydrocarbon molecule?

- (1) single covalent bond (3) triple covalent bond
 (2) double covalent bond (4) ionic bond

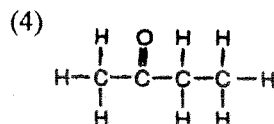
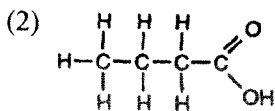
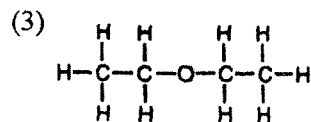
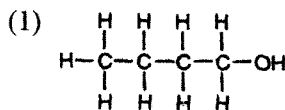
16. Which is an isomer of *n*-butane?



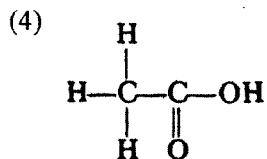
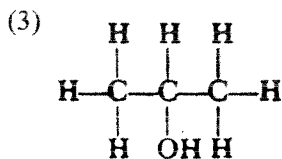
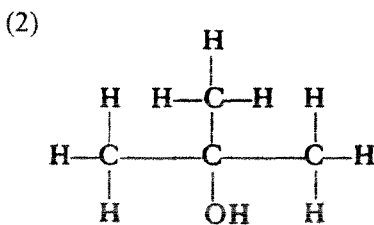
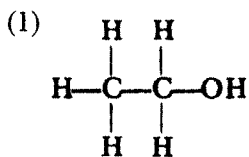
17. Given the compound:



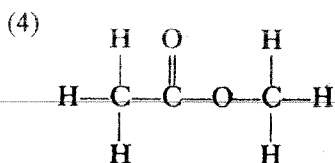
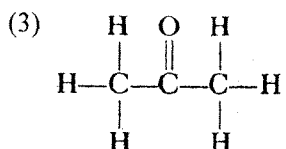
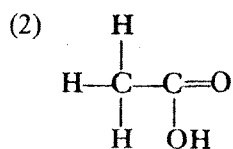
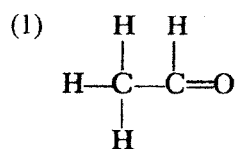
Which structural formula represents an isomer?



18. Which structural formula represents a secondary alcohol?



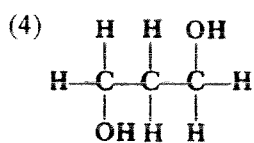
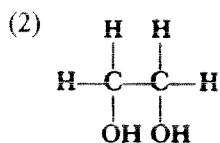
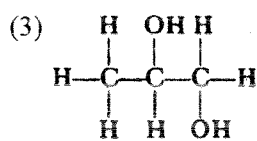
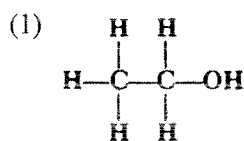
19. Which structural formula represents a ketone?



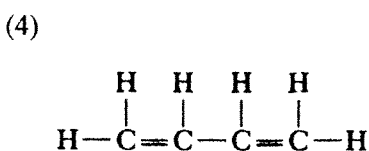
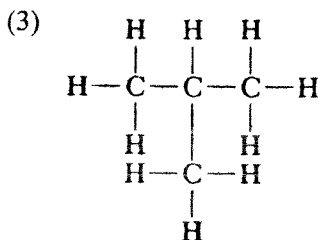
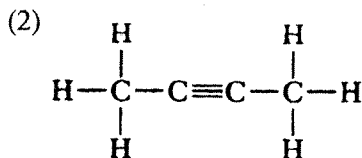
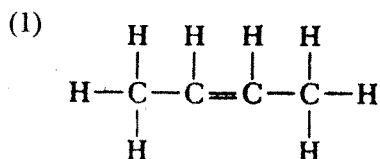
20. Which compound is a member of the alkene series of hydrocarbons?

- (1) benzene (3) toluene
(2) propene (4) butadiene

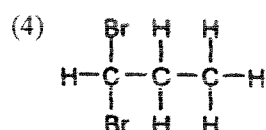
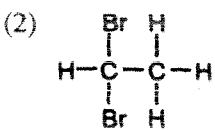
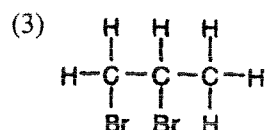
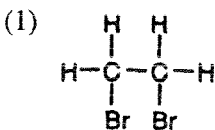
21. Which is the correct structural formula for 1,2-ethanediol?



22. Which hydrocarbon is a member of the alkane series?


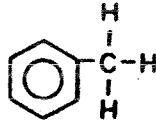
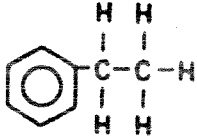
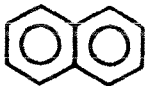
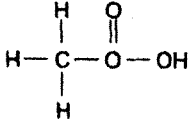
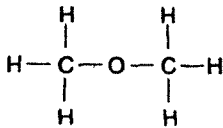
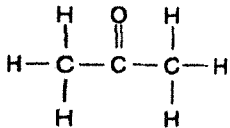
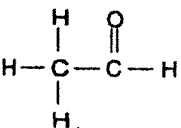
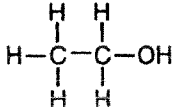
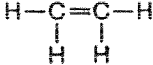

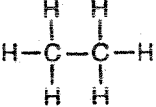


23. Which structural formula represents 1,1-dibromopropane?

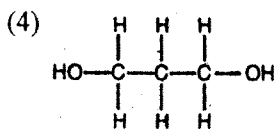
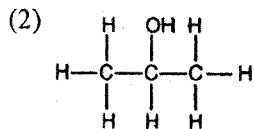
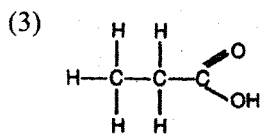
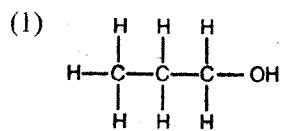


24. When C_2H_4 molecules polymerize, the name of the polymer formed is

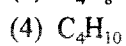
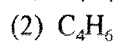
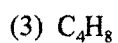
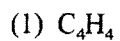
- (1) polymethylene (3) polypropylene
(2) polyethylene (4) polybutylene

25. What is the general formula for an ether?
- (1) R_1-O-R_2 (2) $R-OH$
- (3) $\begin{array}{c} O \\ || \\ R-C-H \end{array}$ (4) $\begin{array}{c} O \\ || \\ R-C-OH \end{array}$
26. Which compound is an isomer of CH_3OCH_3 ?
- (1) CH_3COOH (2) CH_3CHO
- (3) C_6H_5OH (4) C_2H_5OH
27. Which compound has the molecular formula C_5H_{12} ?
- (1) butane (2) pentane
- (3) 2,2-dimethyl butane (4) 2,2-dimethyl pentane
28. The reaction of an alcohol with an organic acid produces a compound classified as
- (1) a soap (2) a salt
- (3) an ester (4) a base
29. Which series of hydrocarbons contains one triple covalent bond?
- (1) alkyne (2) alkadiene
- (3) alkane (4) alkene
30. Which is a saturated hydrocarbon?
- (1) C_3H_8 (2) C_6H_6
- (3) C_2H_5OH (4) $C_2H_4O_2$
31. Which of the following represents toluene?
- (1)  (2) 
- (3)  (4) 
32. What is the maximum number of covalent bonds that can be formed by one carbon atom?
- (1) 1 (2) 2
- (3) 3 (4) 4
33. Which structural formula represents an ether?
- (1)  (2) 
- (3)  (4) 
34. What is the formula for pentanol?
- (1) C_5H_{12} (2) $C_5H_{11}OH$
- (3) C_4H_{10} (4) C_4H_9OH
35. Which molecule contains a triple covalent bond between adjacent carbon atoms?
- (1) C_2H_4 (2) C_2H_2
- (3) C_3H_6 (4) C_3H_8
36. What is the general formula for the members of the alkane series?
- (1) C_nH_{2n} (2) C_nH_{2n+2}
- (3) C_nH_{2n-2} (4) C_nH_{2n-6}
37. Which structural formula represents a compound that is a member of the alkene series?
- (1)  (2) 
- (3)  (4) 
38. What is the number of hydrogen atoms in a molecule of ethyne?
- (1) 6 (2) 2
- (3) 8 (4) 4

39. Which structural formula represents an organic acid?



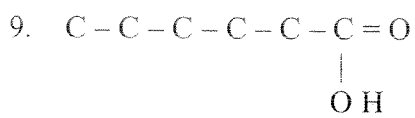
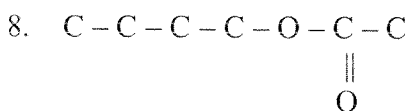
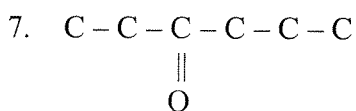
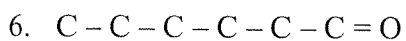
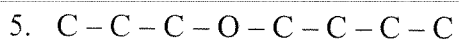
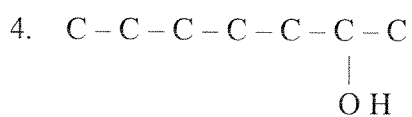
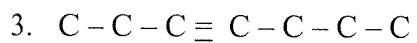
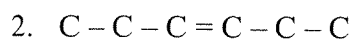
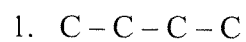
40. What is the correct formula for butene?



Organic Chemistry Structures Identification Practices

Name

Chemical
Formula



10.

