ALCOHOLS AND ESTERS TEST

1.The systematic (IUPAC. name of this structure: $CH_3CHOHCH_2CH_3$ is
A. butyl alcohol
B. n-butanol
C. 2-butanol
D. butanol
E. isobutyl alcohol

2.The isomer of normal butyl alcohol is
A. n-butanol
B. butanoic acid
C. 2-butanol
D. isopropanol
E. ethyl, methyl ether

3.To burn 0.1 mol of a monohydric alcohol, 0.45 mol of O_2 is needed. Find the molecular weight of this alcohol.
A. 30 B. 32 C. 46 D. 60 E. 64

4.When 15.2g of a dihydric alcohol reacts with sufficient sodium metal, 4.48 L of H_2 gas at STP is produced. What is the molecular weight of the alcohol?
A. 152 B. 76 C. 46 D. 38 E. 32

5.How many liters of CO_2 at STP can be produced by the fermentation of 75 g of 60% glucose?
A. 2.8 B. 5.6 C. 11.2 D. 22.4 E. 4.48

6.How many alcohol isomers does propanediol have?
A. 1 B. 2 C. 3 D. 4 E. 5

7.If "n" indicates the number of carbon atoms in the structure of a monohydric alcohol, which one of the following is the coefficient of O_2 in the combustion equation of this alcohol?
A. 3n/2
B. (3n-1)/2
C. (3n+1)/2
D. (2n+1)/2
E. 2n+1

8.224 mL of H_2 gas at STP is formed from the reaction of 1.48 g of a monovalent alcohol with sufficient potassium metal. How many alcohol isomers does this alcohol have?
A. 1 B. 2 C. 3 D. 4 E. 5

9.How many grams of dimethyl ether can be prepared from 40 g of 80% methyl alcohol with 80% efficiency?
A. 18.4 g B. 23.0 g C. 27.6 g D. 32.0 g E. 36.8 g

10. What is the molecular weight of the alcohol used to obtain the simple ether whose molecular weight is 74 g?
A. 37 B. 46 C. 56 D. 74 E. 148

11. Predict the product of the reaction with sodium methoxide with ethyl iodide.
A. methane
B. propane
C. 2-propanol
D. 1-propanol
E. ethyl, methyl ether

12. What is the coefficient of ethyl alcohol when the following equation is balanced with the smallest whole numbers?
$C_2H_5\text{-}OH+MnO_4^-+H^+ \rightarrow CH_3COOH+Mn^{+2}+H_2O$
A. 1 B. 2 C. 3 D. 4 E. 5

13. $Y + NaOH \rightarrow R\text{-}OH + ...$
$2Y + 2Na \rightarrow C_2H_6 + ...$
What is the name of the reactant represented by "Y" in the reactions given above?
A. methyl bromide
B. ethyl alcohol
C. sodium ethoxide
D. ethyl bromide
E. sodium methoxide

14. 0.1 mol of an alcohol reacts with sodium metal to produce 2.24 L of H_2 gas at STP and 10.6 g of sodium alkoxide. What is the molecular weight of the alcohol?
A. 46 B. 60 C. 62 D. 74 E. 106

15. How many ether isomers does 2-propanol have?
A. 1 B. 2 C. 3 D. 4 E. 5

16. When 20g mixture of ethyl alcohol–diethyl ether reacts with sufficient sodium metal, 1.12 L of H_2 gas forms at STP. Find the mass percentage of ether in the mixture.
A. 23% B. 40% C. 46% D. 69% E. 77%

17. What is the molecular weight of the ether, which is formed by removing 1 mol of water from 2 mol of alcohol having the molecular weight of 60 g/mol?
A. 30 B. 42 C. 60 D. 102 E. 120

18. Which of the following gives an aldehyde when oxidized?

A. C_2H_5OH B. C_2H_5CHO C. CH_3CHCH_3 (OH)

D. CH_3OCH_3 E. $CH_3C(CH_3)_2$ (OH)

19. To burn 0.1mol of a monovalent alcohol, 0.6 mol of O_2 is required. How many alcohol isomers does this alcohol have?

A. 1 B. 2 C. 3 D. 4 E. 5

20. How many grams of ethyl alcohol produce ethylene which is required to decolorize 200 g of 20% Br_2 solution?

A. 5.25 B. 11.5 C. 23.0 D. 33.5 E. 46.0

21. What volume of air at STP is required to burn 0.1mol of 2-butanol completely?

A. 11.2 L B. 22.4 L C. 33.6 L D. 44.8 L E. 67.2 L

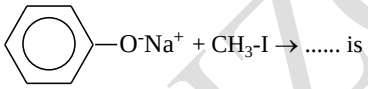
22. What is the organic substance which will be obtained through the oxidation of 3-methyl-2-butanol?

A. ether
B. aldehyde
C. ketone
D. acid
E. ester

23. Ethers and alcohols can be isomeric. How many alcohol and ether isomers does the molecular formula C_3H_8O have?

A. 1 B. 2 C. 3 D. 4 E. 5

24. The product of this reaction



$-O^-Na^+ + CH_3\text{-}I \rightarrow$ ..... is

A. alcohol
B. ether
C. aldehyde
D. ketone
E. acid

25. How many grams of glycol ($HOCH_2CH_2OH$) can be prepared from 9.4g of 1, 2-dibromoethane?

A. 3.1 B. 6.2 C. 12.4 D. 24.8 E. 31.0

26. What is the coefficient of ethyl alcohol when following reaction is balanced with the smallest whole numbers?

$C_2H_5OH + KMnO_4 \rightarrow$ $CH_3-C(=O)-H$ + MnO_2 + KOH + H_2O

A. 1 B. 2 C. 3 D. 4 E. 5

27. When 24 g of a monovalent alcohol reacts with sufficient Na metal at STP is 4.48 L. What is the molecular weight of this alcohol?

A. 24 B. 30 C. 48 D. 60 E. 74

28. Given,

$2CH_3\text{-}CH_2\text{-}CH_2OH$ /(aciD. $\rightarrow Z$ + ...

$Z + H_2O \rightarrow Y$

What is the product represented by "Y" in the above given reactions?

A. primary alcohol
B. secondary alcohol
C. tertiary alcohol
D. aldehyde
E. ketone