

الإجابة النموذجية لامتحان كيمياء عضوية أليفاتية (١)

٢١١ ك
(ورقة امتحانية كاملة)

المستوى : الثاني
الشعبة: كيمياء خاص
التاريخ : الاحد ٢٠١٧/١/١
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قسم : الكيمياء
كلية : العلوم

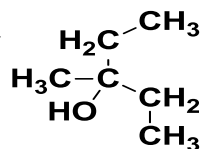


Final Exam of Aliphatic Chemistry (1) [211 Ch] for 2nd Year Students

Answer the following questions:

[48 Marks]

1. What is the IUPAC name for the following compound



- (a) 2-methylpentan-3-ol (b) 3-methylpentan-3-ol
(c) 3-ethylbutan-3-ol (d) 3-ethyl-3-methylpropan-3-ol

2. Dimethyl ether is an isomer with:

- (a) Ethanol. (b) Diethyl ether. (c) Ethanal. (d) Propanone.

3. In Cory-House reaction we can prepared n-pentane by reacting ethylbromide with...

- (a) $(\text{CH}_3)_2\text{LiCu}$ (b) $(\text{CH}_3\text{CH}_2\text{CH}_2)_2\text{LiCu}$ (c) $\text{CH}_3\text{CH}_2\text{Li}$ (d) $\text{CH}_3\text{CH}_2\text{CH}_2\text{MgBr}$

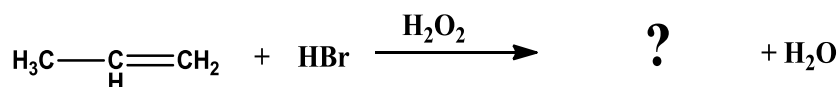
4. Which of the following radicals have the highest inductive effect (+I):

- (a) Me_2CH^+ (b) CH_3^+ (c) MeCH_2^+ (d) Me_3C^+

5. Write the major product of the reaction of $\text{RCH}_2\text{CHXCH}_3$ with $\text{NaOH}^{\text{(alcoh.)}}$

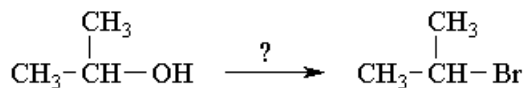
- (a) $\text{RCH}_2\text{CH}_2\text{CH}_2\text{OH}$ (b) $\text{RCH}_2\text{CH}(\text{OH})\text{CH}_3$ (c) $\text{RCH}=\text{CHCH}_3$ (d) $\text{RCH}_2\text{CH}=\text{CH}_2$

6. Give the product of the following reaction:



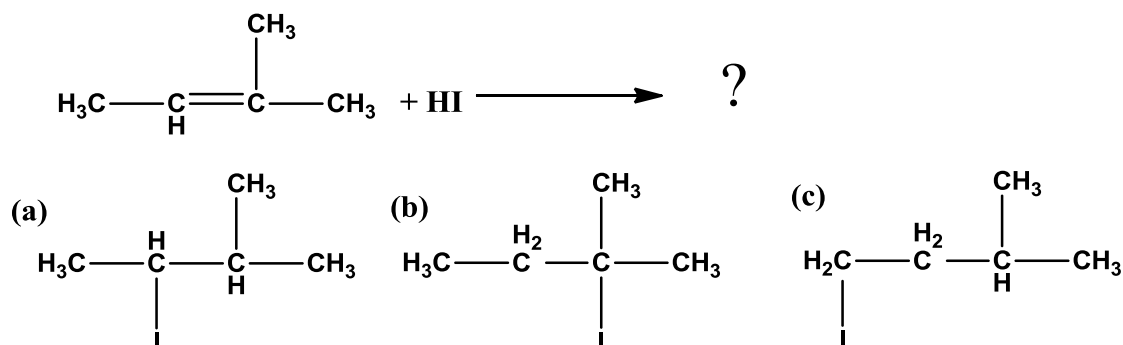
- (a) $\text{H}_3\text{C}-\underset{\text{Br}}{\overset{\text{H}}{\text{C}}}-\text{CH}_3$ (b) $\text{H}_3\text{C}-\underset{\text{Br}}{\overset{\text{H}}{\text{C}}}-\underset{\text{Br}}{\text{CH}_2}$ (c) $\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\underset{\text{Br}}{\text{CH}_2}$ (d) $\text{CH}_2\text{Br}-\text{CH}=\text{CH}_2$

7. What is the best reagent to convert isopropyl alcohol to isopropyl bromide?



- a) Br_2 (b) CH_3Br (c) HBr (d) CH_3MgBr

8. Give the product of the following reaction:



9. Which of the following is a tertiary alcohol?

- (a) butanol (b) 2-methylpropanol (c) 2-methylpropan-2-ol (d) 1-methylethanol

10. Which of the following is a correct name for $\text{CH}_3\text{CH}_2\text{CH}_2\text{-O-CH}_2\text{CH}_3$?

- (a) propylethyl ether (b) 2-ethoxypentane
 (c) 3-ethoxypropane (d) ethylpropyl ether

11. Which is more of the following compounds can react with sodium metal?

- (a) CH_3OCH_3 (b) CH_3OH (c) $\text{C}_2\text{H}_5\text{Br}$ (d) CH_3NH_2

12. Which of the following alcohols would be oxidized to propan-2-one?

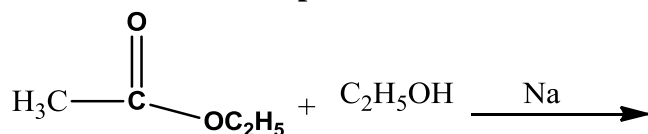
- (a) Ethanal (b) Propan-2-ol (c) 2-Methylpropan-2-ol (d) Butan-1-ol

13. Select the correct product.



- a) $(\text{CH}_3)_2\text{Br}$ b) $(\text{CH}_3)_2\text{O}$ c) $(\text{CH}_3)_2\text{Ag}$ d) $(\text{CH}_3\text{CH}_2)_2\text{O}$

14. Select the correct product.



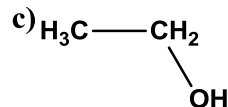
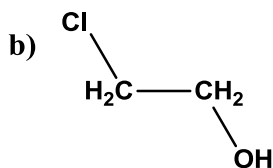
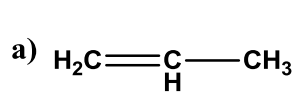
- a) $2 \text{CH}_3\text{CH}_2\text{OH}$ b) $2 \text{CH}_3\text{OH}$ c) $\text{CH}_3\text{CH}_2\text{OH} + \text{CH}_3\text{OH}$

15. Select the correct product.

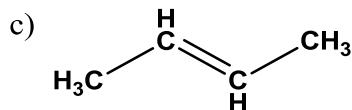
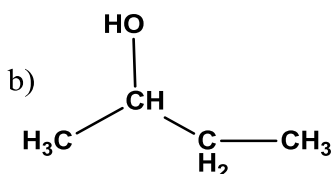
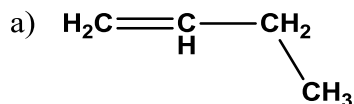
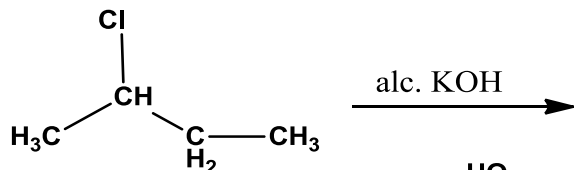


- a)
$$\begin{array}{c} \text{H} \\ | \\ \text{H}_3\text{C}-\text{C}-\text{CH}_3 \\ | \\ \text{OH} \end{array}$$
- b)
$$\begin{array}{c} \text{H}_2 \\ | \\ \text{H}_3\text{C}-\text{C}-\text{CH}_2 \\ | \\ \text{OH} \end{array}$$
- c)
$$\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{H}_3\text{C}-\text{C}-\text{CH}_2 \\ | \quad | \\ \text{OH} \quad \text{OH} \end{array}$$

16. Select the correct product.

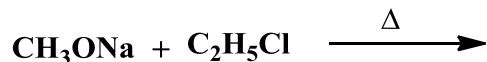


17. Choose the correct answer.



d) All Incorrect

18. Choose the correct answer.



(a) diethyl ether

(b) dimethyl ether

(c) ethyl methyl ether

(d) propane

19. Which one of the following compounds would react with $\text{C}_2\text{H}_5\text{MgBr}$ to make 2-butanol?

(a) Ethanal.

(b) Ethyl formate.

(c) Propanoic acid.

(d) Acetone.

20. Which reagent is essential for the synthesis of ethanethiol?

a) Ethanol, P_2S_5

b) Ethanol, P_2O_5

c) Ethanol, KSH

d) Zn, H_2SO_4

21-Reductive amination of acetaldehyde gave

a- Ethylamine b- methylamine c- propylamine d- butylamine

22- Reaction of acetamide withgave methylamine

a- Br_2/HCl b- Br_2/KOH c- Br_2/NaOH d- (b & c)

23- Phthalamide was converted to methylamine through reaction with.....

a- KOH b- CH_3Cl c- $\text{KOH}/\text{H}_2\text{O}$ d- all of these

24- Reduction of methylcyanide by LiAlH_4 gave.....

a- Butylamine b- ethylamine c- propylamine d- none of these

25- Amination of excess alkylhalide with ammonia gave primary amine and.....

a- 2° amine b- 3° amine c- quaternary amine d- all of these

26- Reduction of oxime with H₂/Ni gave

a- 1° amine b- 2° amine c- 3° amine d- all of these

27- Compounds with four alkyl group attached to nitrogen atom are called.....

a- Quaternary ammonium salts b- 2° amine c- 3° amine d- b and c

28- The structure of amine which has MF C₃H₉N can be written as

a- CH₃CH₂CH₂NH₂ b- (CH₃)₂CHNH₂ c- CH₃CH₂NHCH₃ d- all of these

29- The highest boiling point in these compounds is

a- Propylamine b- trimethylamine c- N,N-dimethylamine d- propane

30- Reaction of acylchloride with trialkyl amine gives.....

a- N-substituted amide c- N,N,N-trisubstituted amide b- N,N-disubstituted amide d- none of these

31- Primary amine reacts with benzenesulphonyl chloride to give compound which isin NaOH

a- Soluble b- insoluble c- sparingly soluble d- none of these

32- 1°, 2°, 3° amines can be distinguished by reaction with....

a- HCl b- HNO₂ c- PhSO₂Cl d- b or c

33- The most basic compound is.....

a- Ethane b- ethylamine c- diethylamine d- methylamine

34- Addition of 2 moles of ROH to RCHO gives

a- Hemiacetal b- hemiketal c- acetal d- ketal

35- Lactic acid can be produced from hydrolysis of

a- Acetaldehydecyanohydrine b- acetonecyanohydrine c- a and b d- none of these

36- Reaction of Grignard reagent with acetone followed by hydrolysis gives ...

a- 1° alcohol b- 2° alcohol c- 3° alcohol d- none of these

37- The most reactive compound in nucleophilic addition is...

a- Ethanal b- propanone c- methylethyl ketone d- propanal

38- Hydration of methylacetylene gives.....

a- Ethanal b- acetone c- ethylmethyl ketone d- all of these

39- Ozonolysis of 2-pentene followed by hydrolysis gives

a- Acetone b- propanal c- ethanal d- b and c

40- Alkaline hydrolysis of 2,2-dichloropropane gives ...

- a- 2-propanone b- propanal c- propanoic acid d- all of these

41- Pyrolysis of calcium acetate gives.....

- a- Acetic acid b- acetaldehyde c- acetone d- all of these

42- Reaction of 2 moles of HCHO with NaOH gives.....

- a- Ethanal b- methanol c- sod. formate d- b and c

43- The reaction of acetone withforms ketal

- a- 2 moles of RX b- 1 mole of ROH c- 2 moles of ROH d- 4 moles of ROH

44- Reaction of Grignard reagent with ethanal gives

- a- 2° alcohol b- 1° alcohol c- 3° alcohol d- all of these

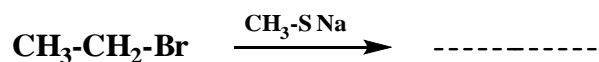
45- The reaction of formaldehyde or benzaldehyde in the presence of NaOH is called.....

- a- Aldol b- ketol c- Cannizaro d- crossed aldol

46- The most reactive compound through the reaction with nucleophile is

- a- RCOCl b- RCONH₂ c- RCOOR d- RCOOCOR

47- What is the major product obtained from the following reaction?



- a- CH₃-CH₂-CH₃ b- CH₃-CH₂-CH₂-S Na c- CH₃-CH₂-S-CH₃ d- CH₃-S-CH₃

48- Reaction of n-propanol with thionyl chloride SOCl₂ gives

- a- Iso-propyl chloride b- Butyl chloride c- Butyl bromide d- n-Propyl chloride

Model Answer (211Ch) 1st Term

1 b	23 d	45 c
2 a	24 b	46 a
3 b	25 d	47 c
4 d	26 a	48 d
5 c	27 a	
6 c	28 d	
7 c	29 a	
8 b	30 d	
9 c	31 a	
10 d	32 d	
11 c	33 c	
12 b	34 c	
13 d	35 a	
14 a	36 c	
15 a	37 a	
16 b	38 b	
17 c	39 d	
18 c	40 a	
19 a	41 c	
20 a	42 d	
21 a	43 c	
22 d	44 a	