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(To be filled in the
OMR Sheet)

प्रश्नपुस्तिका क्रमांक
Question Booklet No.

O.M.R. Serial No.

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प्रश्नपुस्तिका सीरीज
Question Booklet Series

A

M.Sc Industrial Chemistry (First Semester)

Examination, February/March-2022

MSIC-103

Organic Chemistry

Time : 1:30 Hours

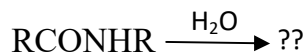
Maximum Marks-100

जब तक कहा न जाय, इस प्रश्नपुस्तिका को न खोलें

- निर्देश : —
1. परीक्षार्थी अपने अनुक्रमांक, विषय एवं प्रश्नपुस्तिका की सीरीज का विवरण यथास्थान सही- सही भरे, अन्यथा मूल्यांकन में किसी भी प्रकार की विसंगति की दशा में उसकी जिम्मेदारी स्वयं परीक्षार्थी की होगी।
 2. इस प्रश्नपुस्तिका में 100 प्रश्न हैं, जिनमें से केवल 75 प्रश्नों के उत्तर परीक्षार्थियों द्वारा दिये जाने हैं। प्रत्येक प्रश्न के चार वैकल्पिक उत्तर प्रश्न के नीचे दिये गये हैं। इन चारों में से केवल एक ही उत्तर सही है। जिस उत्तर को आप सही या सबसे उचित समझते हैं, अपने उत्तर पत्रक (O.M.R. ANSWER SHEET) में उसके अक्षर वाले वृत्त को काले या नीले बाल प्वाइंट पेन से पूरा भर दें। यदि किसी परीक्षार्थी द्वारा निर्धारित प्रश्नों से अधिक प्रश्नों के उत्तर दिये जाते हैं तो उसके द्वारा हल किये गये प्रथमतः यथा निर्दिष्ट प्रश्नोत्तरों का ही मूल्यांकन किया जायेगा।
 3. प्रत्येक प्रश्न के अंक समान हैं। आप के जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
 4. सभी उत्तर केवल ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर ही दिये जाने हैं। उत्तर पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
 5. ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाय।
 6. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी प्रश्नपुस्तिका बुकलेट एवं ओ०एम०आर० शीट पृथक-पृथक उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें।
 7. निगेटिव मार्किंग नहीं है।
- महत्वपूर्ण : — प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्ष निरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।

1. Reaction of aldehydes undergo self condensation are called.
 - (A) Aldol condensation
 - (B) Perkin reaction
 - (C) Claisen rearrangements
 - (D) None of these
2. Meaning of ALDOLS is :
 - (A) Acid plus alcohols
 - (B) Aldehyde plus alcohols
 - (C) Both acids
 - (D) Both bases
3. What are the primary condition of aldol condensation :
 - (A) One aldehyde group
 - (B) Two aldehyde group
 - (C) Three aldehyde group
 - (D) All of these
4. The conversion of ketooximes to N-substituted amides is known as.
 - (A) Aldol condensation
 - (B) Curtius reaction
 - (C) Lossen rearrangement
 - (D) Beckmann rearrangement
5. The cinnamaldehyde oxime undergoes isomerization, what types of reactions involved in this reaction.
 - (A) Beckmann rearrangement
 - (B) Aldol condensation
 - (C) Lossen rearrangement
 - (D) None of these

6. Complete the reaction :

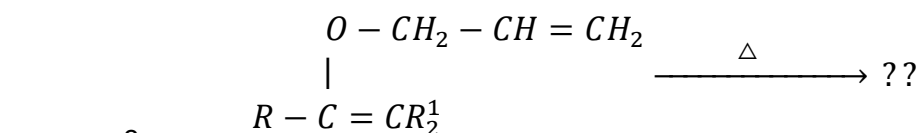


- (A) RNH_2
- (B) RCONH_2
- (C) RCOOH
- (D) R-OH

7. The shift of group from oxygen to carbon is called.

- (A) Wolff rearrangement
- (B) Perkin reaction
- (C) Lossen rearrangement
- (D) Claisen rearrangement

8. Complete the reaction?



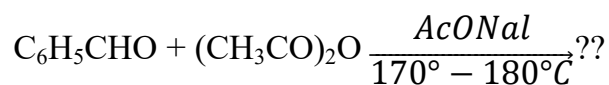
- (A) $\text{R}-\overset{\overset{\text{O}}{\parallel}}{\text{C}}-\text{CR}_2^1 - \text{CH}_2 - \text{CH} = \text{CH}_2$
- (B) $\text{R}-\text{CH} = \text{CR}_2^1$
- (C) $\text{R}-\text{COOH}$
- (D) $\text{CH}_2 = \text{CH}_2$

9. The decomposition of acylazides gives isocyanates in the presence of inert solvent is called.

- (A) Lossen rearrangement
- (B) Perkin reaction
- (C) Both (A) and (B)
- (D) Curtius rearrangement

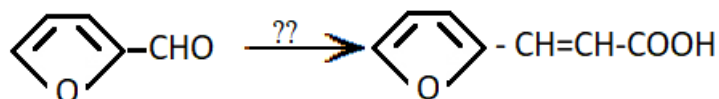
10. The conversion of ethyl phenyl acetate into benzyl amine is called the.
- Application of Perkin
 - Application of Curtius
 - Application of Reimer-Tiemann
 - None of these
11. Complete the reaction and write the name of rearrangement.
- $$\text{C}_6\text{H}_5\text{CH}_2\text{COCH}_2\text{Cl} \xrightarrow{\text{R}\bar{\text{O}}} ??$$
- Favorskii Rearrangement
 - Lossen rearrangement
 - Claisen reaction
 - None of these
12. Complete the reaction and find out the products :
- $$\text{RCONH}_2 + \text{Br}_2 + 4 \text{NaOH} \longrightarrow ??$$
- R-NH₂
 - NaBr
 - Na₂CO₃
 - All of these
13. Amides are converted into amines, what types of reaction involved in this conversion.
- Wagner-Meerwein Rearrangement
 - Wolff-Kichner Rearrangement
 - Hofmann Reaction
 - None of these
14. The Nicotinamide is converted into α -aminopyridine. What types of reaction involved in this conversion?
- Hofmann rearrangement
 - Schmidt rearrangement
 - Lossen rearrangement
 - Perkin rearrangement

15. Complete the reaction :



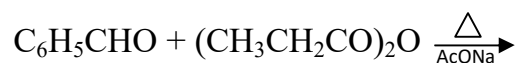
- (A) $\text{C}_6\text{H}_5 - \text{COOH}$
- (B) $\text{C}_6\text{H}_5\text{CHO}$
- (C) $\text{C}_6\text{H}_5 - \text{OH}$
- (D) $\text{C}_6\text{H}_5 \text{CH} = \text{CH} - \text{COOH}$

16. Complete the reaction :



- (A) $(\text{CH}_3\text{CO})_2\text{O}$
- (B) Ac ONa
- (C) Δ
- (D) All of these

17. Complete the reaction

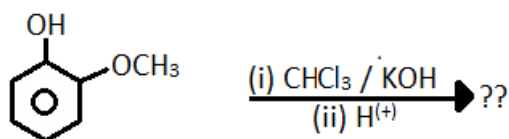


- (A) $\text{C}_6\text{H}_5 - \text{CH} = \text{C}(\text{CH}_3) - \text{COOH}$
- (B) $\text{C}_6\text{H}_5\text{COOH}$
- (C) $\text{CH}_3\text{CH}_2\text{COOH}$
- (D) $\text{C}_6\text{H}_5\text{CHO}$

18. What types of reactions involved when diols are converted into ketone (or) aldehyde.

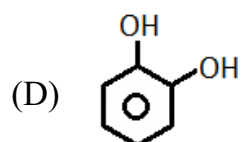
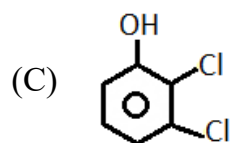
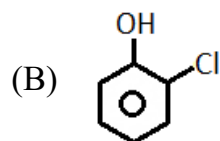
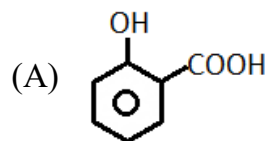
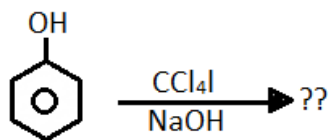
- (A) Curtius reaction
- (B) Schmidt reaction
- (C) Lossen rearrangement
- (D) Pinacol-pinacotone rearrangement

19. When isobutylene is converted into Dimethyl acetaldehyde, what types of reaction involved.
- (A) Application of Stobbe
 (B) Application of Lossen
 (C) Application of pinacol-pinacolone
 (D) None of these
20. Formylation of phenols with chloroform in alkaline solution is known as.
- (A) Reimer-Tiemann Reaction
 (B) Hofmann reaction
 (C) Beckmann rearrangement
 (D) None of these
21. Complete the reaction



- (A)
- (B)
- (C)
- (D)

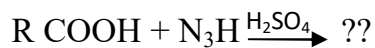
22. Complete the reaction:



23. What will be the product when carboxylic acid and hydrazoic acid reacts in the presence of H_2SO_4 .

- (A) Amine
- (B) Amide
- (C) Acid
- (D) Base

24. Complete the reaction-

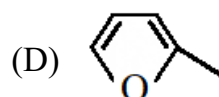
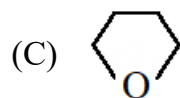
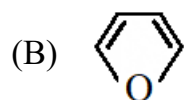
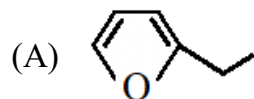
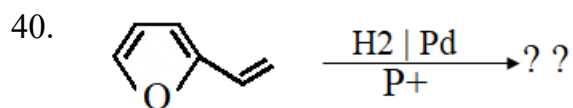


- (A) RCOR
- (B) RCONH_2
- (C) RCONHR
- (D) None of these

25. What types of reaction involved when phenyl-acetic acid is converted benzylamine.
- (A) Lossen rearrangement
 - (B) Curtius reaction
 - (C) Beckmann rearrangement
 - (D) Schmidt reaction
26. When cyclohexanone gives caprolactam. What types of reagent used.
- (A) N_3H
 - (B) H_2SO_4
 - (C) $\text{N}_3\text{H} / \text{H}_2\text{SO}_4$
 - (D) NaOH
27. What types of condensation / Reaction used for the preparation of α, β -unsaturated half ester.
- (A) Stobbe reaction
 - (B) Reimer-Tiemann reaction
 - (C) Pinacol- Pinacolone reaction
 - (D) None of these
28. Ketone is converted into acids, identify the reaction.
- (A) Lossen rearrangement
 - (B) Beckmann rearrangement
 - (C) Reimer-Tiemann Rx
 - (D) Stobbe Rx
29. When neopentyl bromide is hydrolysed under $\text{S}_{\text{N}}2$ reaction? What types of product is formed?
- (A) Alcohol
 - (B) Acid
 - (C) Base
 - (D) Salt

30. When neopentyl alcohol gives 2-methyl-but-2-ene and 2-methyl-but-1-ene. What types of reacting involved ?
- Wagner-Mearwein Rearrangement
 - Perkin Reaction
 - Wolff-Kishner
 - Lossen Rearrangement
31.
$$\begin{array}{c} \text{R} \\ | \\ \text{R}-\text{C}^{\oplus} \\ | \\ \text{R} \end{array}$$
- Carbanion
 - Carbanion Ion
 - Radiceel
 - None of these
32. Arndt-Eistert homologization utilizes Wolff reaction what types of conversion takes place :
- Acid
 - Base
 - Salt
 - None of these
33. The prefix used for Tc is (regarding Heterocyclic compound) :
- Selen
 - Telen
 - Tellura
 - None of these
34. When the ring size is four (4), the suffix used for saturated N is :
- Etidine
 - Etane
 - Etedene
 - None of these

35. The boiling point of furan is :
(A) 30°C
(B) 32°C
(C) 33°C
(D) 31.5°C
36. The structure of furan would be :
(A) Planer
(B) Tetrahedral
(C) Trigonal
(D) sp^3d^2
37. The cyclization of 1,4-diketone under acidic condition is used for the preparation of:
(A) Furan
(B) Thiophene
(C) Pyridine
(D) Indole
38. The cyclization of Allenals and alkene gives :
(A) Furan derivatives
(B) Thiophene derivatives
(C) Indole derivatives
(D) Pyridine derivatives
39. Dield-Alder Rx is called the :
(A) Sigmatropic
(B) Electrocyclic
(C) Cheletropic
(D) Cycle Addition



41. The colour of thiophene is :

(A) Coloured

(B) Colourless

(C) Yellow

(D) Red

42. The thiophene can be prepared from :

(A) Na – iodide

(B) Na – Malic acid

(C) Na – succinate

(D) None of these

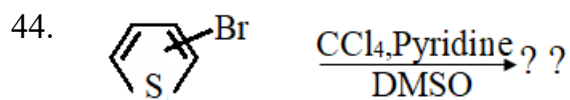
43. Hinsber method used for the preparation of :

(A) Thiophene-derivative

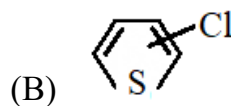
(B) Furan-derivative

(C) Pyridine-derivative

(D) Indole derivative



(A) Derivative of thiophene



(C) Both (A) and (B)

(D) None of these

45. Boiling points and freezing point of pyridine are, respectively :

(A) 95°C, - 10°C

(B) 115°C, -42°C

(C) 105°C, - 40°C

(D) 200°C, -10°C

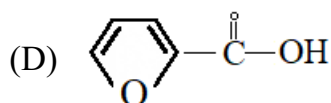
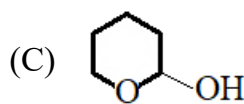
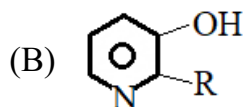
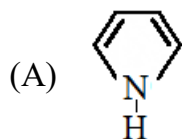
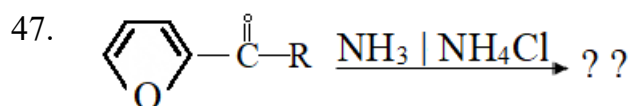
46. What types of Heterocyclic compound can be prepared from 2-methyl anion :

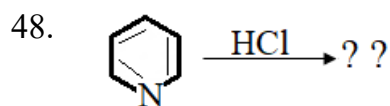
(A) Thiophene

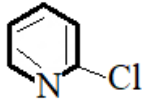
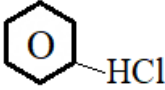
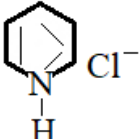
(B) Furan

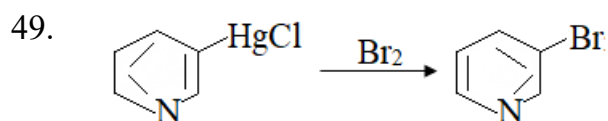
(C) Pyridine

(D) Indole



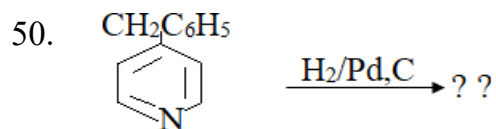


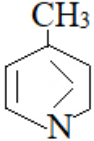
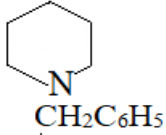
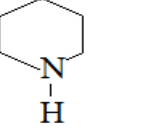
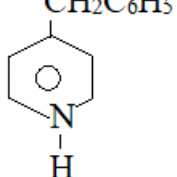
- (A) 
- (B) 
- (C) 
- (D) 

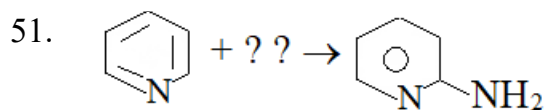


is the properties of :

- (A) Pyrrole
(B) Pyridine
(C) Thiophene
(D) Furan



- (A) 
- (B) 
- (C) 
- (D) 



- (A) NH_3
- (B) NaNH_2
- (C) NH_4OH
- (D) N_2

52. Which one compound gives the order like chloroform :

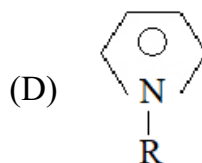
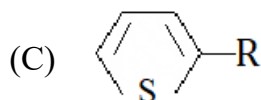
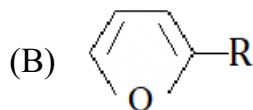
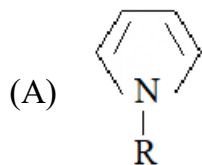
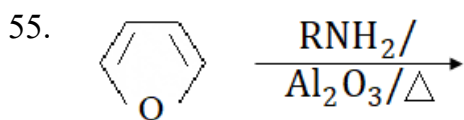
- (A) Pyridine
- (B) Pyrrole
- (C) Thiophene
- (D) Furans

53. Nicotinamide is used for curing the diseases of :

- (A) Fever
- (B) T.B.
- (C) Cancer
- (D) Pellegra

54. The intermolecular hydrogen bond involved in :

- (A) Pyrrole
- (B) Thiophene
- (C) Indole
- (D) Pyridine



56. What types of Heterocyclic compound can be prepared from ammonium mucate :

- (A) Pyridine
- (B) Indole
- (C) Pyrrole
- (D) None of these

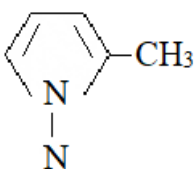
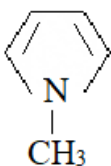
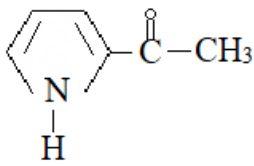
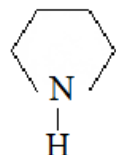
57. What types of reactants used for the preparation of pyrrole through Paal-Knorr Method ?

- (A) Ketonic
- (B) Aldehyde
- (C) Alcoholic
- (D) None of these

58. What will be the effect of electrophilic reaction on pyrrole ?

- (A) One position
- (B) Two position
- (C) Five position
- (D) Four position

59. What will be effect of friedel craft reaction on pyrrole is ?

- (A) 
- (B) 
- (C) 
- (D) 

60. The compound pyrrolidine is found in :

- (A) Onion
(B) Carrot green
(C) Tomato
(D) Potato

61. The nature of Quinoline is :

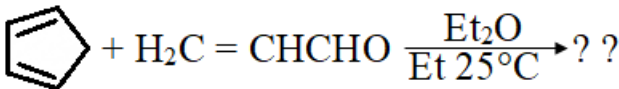
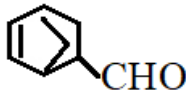
- (A) Inert
(B) Solid
(C) Gas
(D) Hygroscopic colorless liquid

62. Skraup synthesis is used for the preparation of :

- (A) Quinoline
(B) Pyrrole
(C) Pyridine
(D) Thiophene

63. Aniline reacts with β -ketoester, it gives :
- (A) 2-methyl quinoline
 - (B) 4-quinoline
 - (C) 2-methyl-4-quinoline
 - (D) None of these
64. Quinoline $\xrightarrow{\text{Priedl Craft Rx}}$??
- (A) 1- methoxy quinoline
 - (B) 2- methoxy quinoline
 - (C) 4- methoxy quinoline
 - (D) 8- methoxy quinoline
65. On which position nucleophile attack on quinoline :
- (A) 1-position
 - (B) 2-position
 - (C) 3-position
 - (D) None of the above
66. 1,2,3,4- tetrahydro quinoline is prepared by :
- (A) Oxidizing agent
 - (B) Reducing agent
 - (C) Acids
 - (D) Bases
67. Nicotinic acid is prepared with the help of quinoline. What types of agent used :
- (A) Oxidizing
 - (B) Reducing
 - (C) Acidic
 - (D) Basic

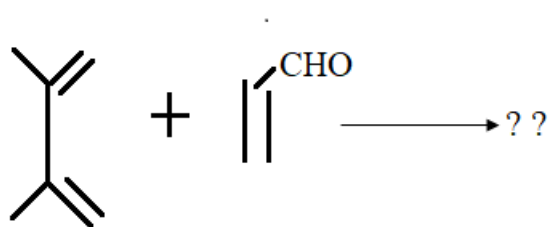
68. Cinchona alkaloids are isolated from :
- (A) Coffee tree
 - (B) Tea tree
 - (C) Cinchona tree
 - (D) Rubber tree
69. The nature of Indole is :
- (A) Solids
 - (B) Liquids
 - (C) Lubricants
 - (D) None of these
70. Phenyl hydrazones of an aldehyde or ketone is used for the preparation of :
- (A) Pyrrole
 - (B) Pyridine
 - (C) Thiophene
 - (D) Indole
71. Acyl-o-toluidine is used for the preparation of :
- (A) Pyrrole
 - (B) Pyridine
 - (C) Furan
 - (D) Indole
72. What will be the product when O-nitro toluene reacts with dimethyl oxalate ?
- (A) Indole
 - (B) Thiophene
 - (C) Pyrrole
 - (D) Pyridine

73. What will be effect of nitration on Indole. The nitro group attack on :
- 1-Position
 - 2-Position
 - 3-Position
 - 4-Position
74. Which types of heterocyclic compounds used for coloring agent ?
- Pyrrole
 - Pyridine
 - Indole
 - Furan
75. What will be product when Ethylene reacts with 1,3-butadiene ?
- Cyclohexane
 - Cyclohexene
 - Cyclohexyne
 - Benzene
76.  ? ?
- 
 - 
 - 
 - None of these
77. Short out the diene in following cyclopentadiene, Isoprene, Butadiene :
- Cyclopentadiene
 - Isoprene
 - Butadiene
 - All of these

78. Short out the dienophile from the following : Maleic anhydride, cyclopentadiene, Benzene, Hexane :

- (A) Maleic acid
- (B) Cyclopentadiene
- (C) Benzene
- (D) Hexane

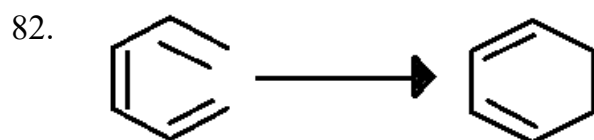
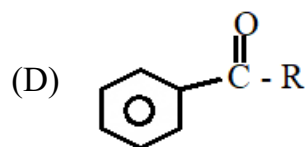
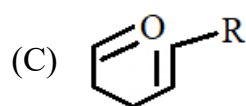
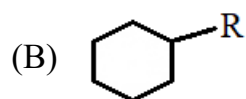
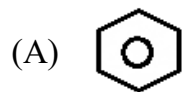
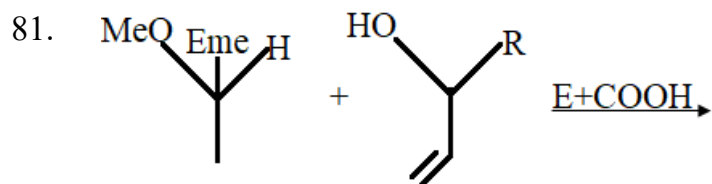
79.



- (A)
- (B)
- (C)
- (D)

80. The conversion of O-aryl phenol from aryl allyl ether is an example of :

- (A) Sigmatropic
- (B) Cyclo addition
- (C) Grignard Reagent
- (D) None of these



is an example of :

- (A) Cyclo addition
- (B) Electrocyclic
- (C) Sigmatropic
- (D) None of these

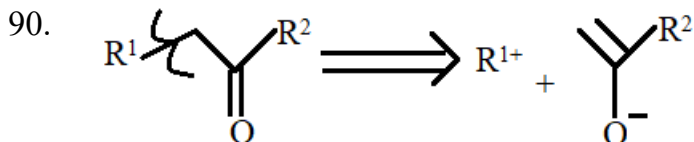


- (A) LiAlH
- (B) LiAlH_2
- (C) LiAlH_3
- (D) LiAlH_4

84. $\text{RCHO} \xrightarrow{\text{LiAlH}_4} ??$
 (A) RCH_2OH
 (B) RCOOH
 (C) R-CH_3
 (D) R-OH
85. $\text{R-N=C=O} \xrightarrow{\text{LiAlH}_4} ??$
 (A) R-CO
 (B) R-NH_2
 (C) R-NH-CH_3
 (D) None of these
86. Aldehyde is converted into glyoxal, what types of reactants used :
 (A) SeO_2
 (B) SeO_4
 (C) OsO_4
 (D) KMnO_4
87. What will be product when acetic acid is reacts with SeO_2
 (A) Malic acid
 (B) Fumeric acid
 (C) Cinamic acid
 (D) Succinic acid
88. $4\text{NaH} + \text{B}(\text{OCH}_3)_3 \xrightarrow{250^\circ\text{C}} ??$
 (A) NaNH_2
 (B) NaBH_4
 (C) NaBH_3
 (D) NaBH_2

89. The acid chloride is converted into alcohols, what types of reagent used ?

- (A) NaBH_4
- (B) NaBH_2
- (C) KMnO_4
- (D) SeO_2



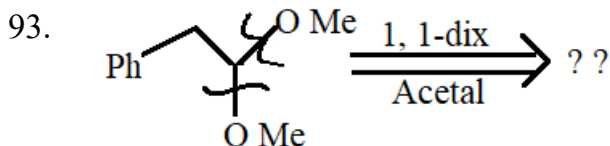
- (A) C-C dis
- (B) C-X dis
- (C) 1,5 dis
- (D) 1,3 dis

91. The weed killer propanil is an example of :

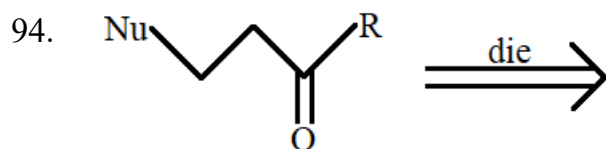
- (A) C-C dis
- (B) $\text{C}_1\text{-C}_2$ dis
- (C) C-X dis
- (D) 1,3 - dis

92. Paracetamol is an example of which disconnection :

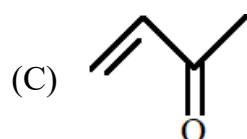
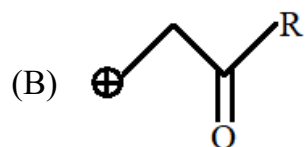
- (A) C-N
- (B) C=N
- (C) $\text{C}\equiv\text{N}$
- (D) None of these



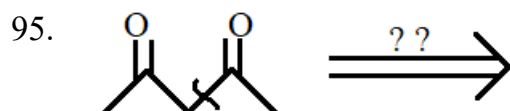
- (A) Ph-CHO
- (B) $\text{Ph-CH}_2\text{-CHO}$
- (C)  CHO
- (D) None of these



(A) $\text{Nu}^{\ominus}$



(D) All of these



(A) 1, 1 die

(B) 1, 2 die

(C) 1, 3 die

(D) 1, 5 die

96. Lithium dimethyl cuprate is also known as :

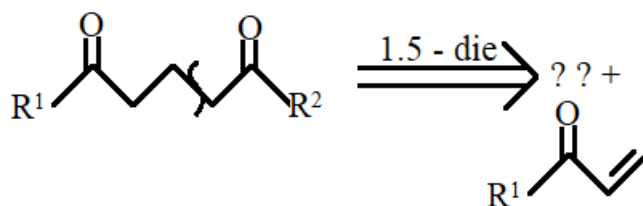
(A) Gilman Reagent

(B) Reducing Agent

(C) Oxidizing Agent

(D) None of these

97.

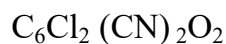


- (A)
- (B)
- (C)
- (D)

98. Gilmann reagent can be prepared with help of :

- (A) Copper Iodide
- (B) Methyl lithium
- (C) Both (A) and (B)
- (D) Tetrahydrofuran

99. The name of compound is :



- (A) DDQ
- (B) DDC
- (C) DDT
- (D) None of these

100. Hydroquinone is soluble in :

- (A) Benzene
- (B) Water
- (C) Ethanol
- (D) Acetone

Rough Work / रफ कार्य

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4. Every answer should be marked only on Answer Booklet (O.M.R ANSWER SHEET). Answer marked anywhere else other than the determined place will not be considered valid.
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