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प्रश्नपुस्तिका क्रमांक
Question Booklet No.

O.M.R. Serial No.

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प्रश्नपुस्तिका सीरीज
Question Booklet Series

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M.Sc Industrial Chemistry (First Semester)

Examination, February/March-2022

MSIC-103

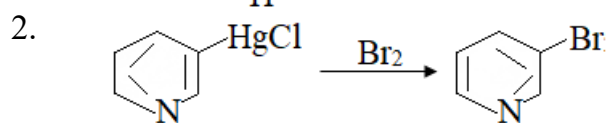
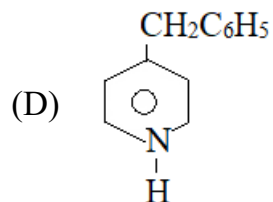
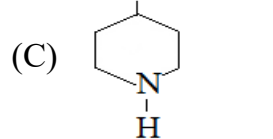
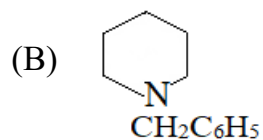
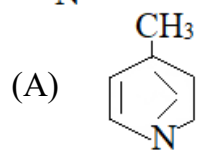
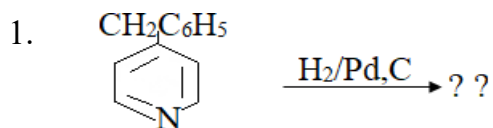
Organic Chemistry

Time : 1:30 Hours

Maximum Marks-100

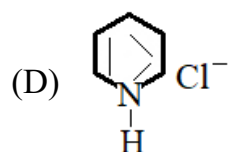
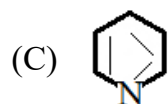
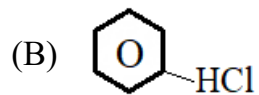
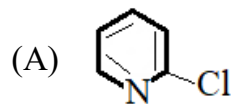
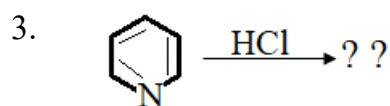
जब तक कहा न जाय, इस प्रश्नपुस्तिका को न खोलें

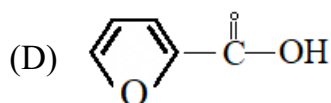
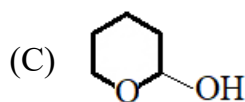
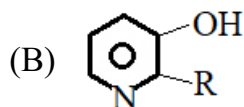
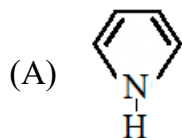
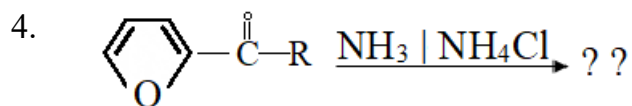
- निर्देश : —
1. परीक्षार्थी अपने अनुक्रमांक, विषय एवं प्रश्नपुस्तिका की सीरीज का विवरण यथास्थान सही- सही भरे, अन्यथा मूल्यांकन में किसी भी प्रकार की विसंगति की दशा में उसकी जिम्मेदारी स्वयं परीक्षार्थी की होगी।
 2. इस प्रश्नपुस्तिका में 100 प्रश्न हैं, जिनमें से केवल 75 प्रश्नों के उत्तर परीक्षार्थियों 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।



is the properties of :

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





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

(A) Thiophene

(B) Furan

(C) Pyridine

(D) Indole

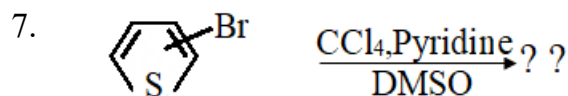
6. Boiling points and freezing point of pyridine are, respectively :

(A) 95°C, - 10°C

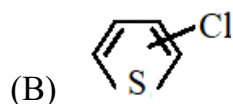
(B) 115°C, -42°C

(C) 105°C, - 40°C

(D) 200°C, -10°C



(A) Derivative of thiophene



(C) Both (A) and (B)

(D) None of these

8. Hinsber method used for the preparation of :

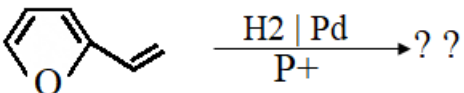
- (A) Thiophene-derivative
- (B) Furan-derivative
- (C) Pyridine-derivative
- (D) Indole derivative

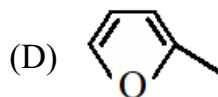
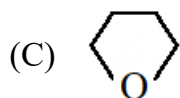
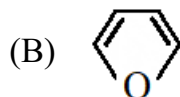
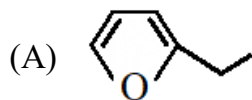
9. The thiophene can be prepared from :

- (A) Na – iodide
- (B) Na – Malic acid
- (C) Na – succinate
- (D) None of these

10. The colour of thiophene is :

- (A) Coloured
- (B) Colourless
- (C) Yellow
- (D) Red

11. 

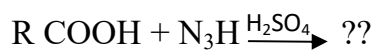


12. Diels-Alder Rx is called the :
- (A) Sigmatropic
 - (B) Electrocyclic
 - (C) Cheletropic
 - (D) Cyclo Addition
13. The cyclization of Allenals and alkene gives :
- (A) Furan derivatives
 - (B) Thiophene derivatives
 - (C) Indole derivatives
 - (D) Pyridine derivatives
14. The cyclization of 1,4-diketone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

17. When the ring size is four (4), the suffix used for saturated N is :
- Etidine
 - Etane
 - Etedene
 - None of these
18. The prefix used for Tc is (regarding Heterocyclic compound) :
- Selen
 - Telen
 - Tellura
 - None of these
19. Arndt-Eistert homologization utilizes Wolff reaction what types of conversion takes place :
- Acid
 - Base
 - Salt
 - None of these
20.
$$\begin{array}{c} \text{R} \\ | \\ \text{R}-\text{C}^{\oplus} \\ | \\ \text{R} \end{array}$$
- Carbanion
 - Carbanion Ion
 - Radiceel
 - None of these
21. 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

22. 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
23. Ketone is converted into acids, identify the reaction.
- (A) Lossen rearrangement
 - (B) Beckmann rearrangement
 - (C) Reimer-Tiemann Rx
 - (D) Stobbe Rx
24. 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
25. 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
26. What types of reaction involved when phenyl-acetic acid is converted benzylamine.
- (A) Lossen rearrangement
 - (B) Curtius reaction
 - (C) Beckmann rearrangement
 - (D) Schmidt reaction

27. Complete the reaction-

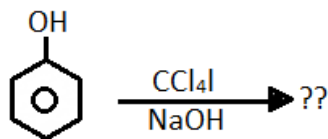


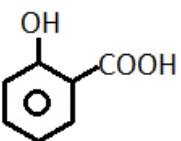
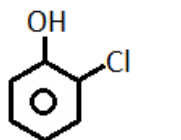
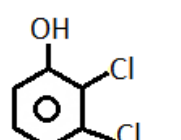
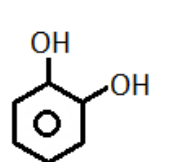
- (A) RCOR
- (B) RCONH₂
- (C) RCONHR
- (D) None of these

28. What will be the product when carboxylic acid and hydrazoic acid reacts in the presence of H₂SO₄.

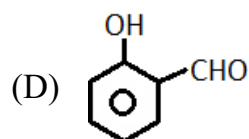
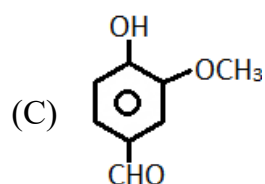
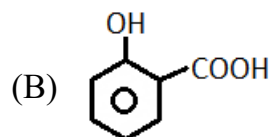
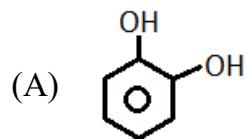
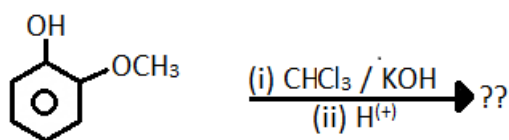
- (A) Amine
- (B) Amide
- (C) Acid
- (D) Base

29. Complete the reaction:



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

30. Complete the reaction



31. 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

32. 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

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

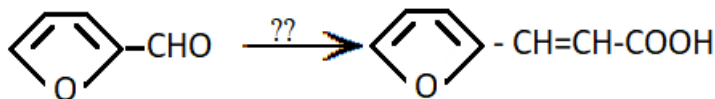
- (A) Curtius reaction
- (B) Schmidt reaction
- (C) Lossen rearrangement
- (D) Pinacol-pinacotone rearrangement

34. Complete the reaction



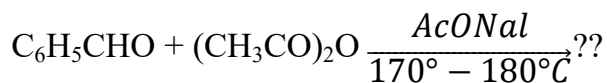
- (A) $\text{C}_6\text{H}_5 - \text{CH} = \text{C}(\text{CH}_3) - \text{COOH}$
- (B) $\text{C}_6\text{H}_5\text{COOH}$
- (C) $\text{CH}_3\text{CH}_2\text{COOH}$
- (D) $\text{C}_6\text{H}_5\text{CHO}$

35. Complete the reaction :



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

36. Complete the reaction :



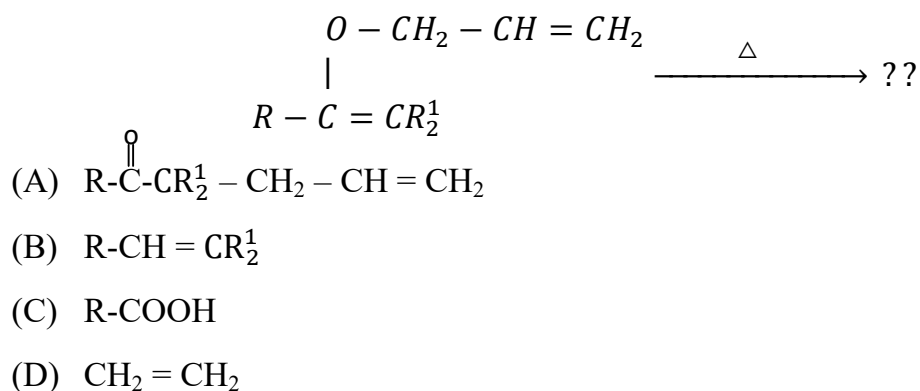
- (A) $\text{C}_6\text{H}_5 - \text{COOH}$
- (B) $\text{C}_6\text{H}_5\text{CHO}$
- (C) $\text{C}_6\text{H}_5 - \text{OH}$
- (D) $\text{C}_6\text{H}_5\text{CH} = \text{CH} - \text{COOH}$

37. The Nicotinamide is converted into α -aminopyridine. What types of reaction involved in this conversion?
- (A) Hofmann rearrangement
 - (B) Schmidt rearrangement
 - (C) Lossen rearrangement
 - (D) Perkin rearrangement
38. Amides are converted into amines, what types of reaction involved in this conversion.
- (A) Wagner-Meerwein Rearrangement
 - (B) Wolff-Kichner Rearrangement
 - (C) Hofmann Reaction
 - (D) None of these
39. Complete the reaction and find out the products :
- $$\text{RCONH}_2 + \text{Br}_2 + 4 \text{NaOH} \longrightarrow ??$$
- (A) R-NH_2
 - (B) NaBr
 - (C) Na_2CO_3
 - (D) All of these
40. Complete the reaction and write the name of rearrangement.
- $$\text{C}_6\text{H}_5\text{CH}_2\text{COCH}_2\text{Cl} \xrightarrow{\text{R}\bar{\text{O}}} ??$$
- (A) Favorskii Rearrangement
 - (B) Lossen rearrangement
 - (C) Claisen reaction
 - (D) None of these
41. The conversion of ethyl phenyl acetate into benzyl amine is called the.
- (A) Application of Perkin
 - (B) Application of curtiuss
 - (C) Application of Reimer-Tiemann
 - (D) None of these

42. 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

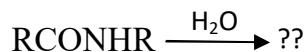
43. Complete the reaction?



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

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

45. Complete the reaction :



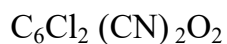
- (A) RNH_2
- (B) $RCONH_2$
- (C) $RCOOH$
- (D) $R-OH$

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

51. Hydroquinone is soluble in :

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

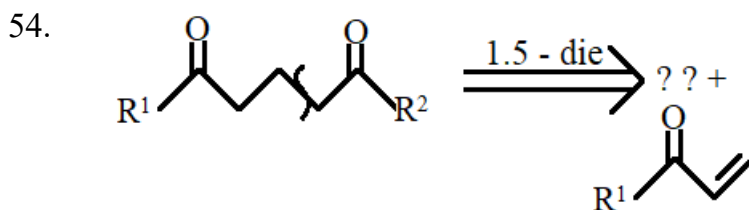
52. The name of compound is :

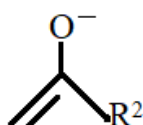
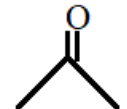


- (A) DDQ
- (B) DDC
- (C) DDT
- (D) None of these

53. Gilmann reagent can be prepared with help of :

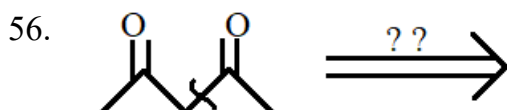
- (A) Copper Iodide
- (B) Methyl lithium
- (C) Both (A) and (B)
- (D) Tetrahydrofuran



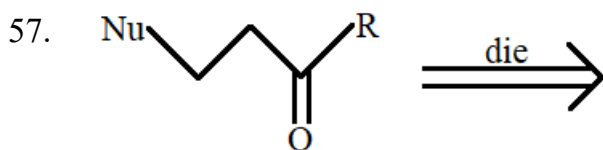
- (A) 
- (B) 
- (C) 
- (D) 

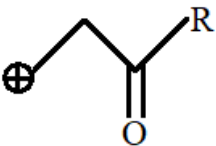
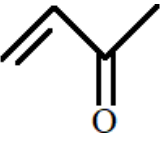
55. Lithium dimethyl cuprate is also known as :

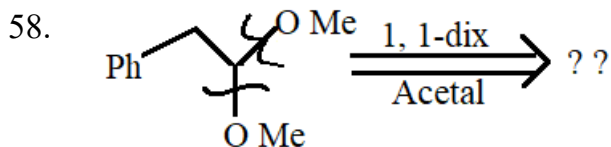
- (A) Gilman Reagent
- (B) Reducing Agent
- (C) Oxidizing Agent
- (D) None of these



- (A) 1, 1 die
- (B) 1, 2 die
- (C) 1, 3 die
- (D) 1, 5 die



- (A) Nu^-
- (B) 
- (C) 
- (D) All of these



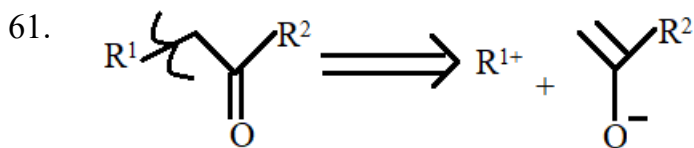
- (A) Ph-CHO
- (B) Ph-CH₂-CHO
- (C)  CHO
- (D) None of these

59. Paracetamol is an examples of which disconnection :

- (A) C-N
- (B) C=N
- (C) C≡N
- (D) None of these

60. The weed killer propanil is anexample of :

- (A) C-C dis
- (B) C₁-C₂ dis
- (C) C-X dis
- (D) 1, 3 – dis



- (A) C-C die
- (B) C-X die
- (C) 1.5 die
- (D) 1.3 die

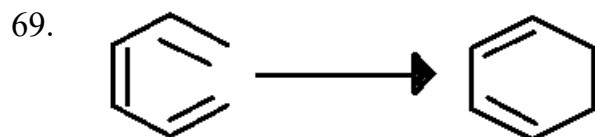
62. The acid chloride is converted into alcohols, what types of reagent used ?

- (A) NaBH₄
- (B) NaBH₂
- (C) KMnO₄
- (D) SeO₂

63. $4\text{NaH} + \text{B}(\text{OCH}_3)_3 \xrightarrow{250^\circ\text{C}} ??$
- (A) NaNH_2
 - (B) NaBH_4
 - (C) NaBH_3
 - (D) NaBH_2
64. What will be product when acetic acid is reacts with SeO_2
- (A) Malic acid
 - (B) Fumeric acid
 - (C) Cinamic acid
 - (D) Succinic acid
65. Aldehyde is converted into glyoxal, what types of reactants used :
- (A) SeO_2
 - (B) SeO_4
 - (C) OsO_4
 - (D) KMnO_4
66. $\text{R}-\text{N}=\text{C}=\text{O} \xrightarrow{\text{LiAlH}_4} ??$
- (A) $\text{R}-\text{CO}$
 - (B) $\text{R}-\text{NH}_2$
 - (C) $\text{R}-\text{NH}-\text{CH}_3$
 - (D) None of these
67. $\text{RCHO} \xrightarrow{\text{LiAlH}_4} ??$
- (A) RCH_2OH
 - (B) RCOOH
 - (C) $\text{R}-\text{CH}_3$
 - (D) $\text{R}-\text{OH}$

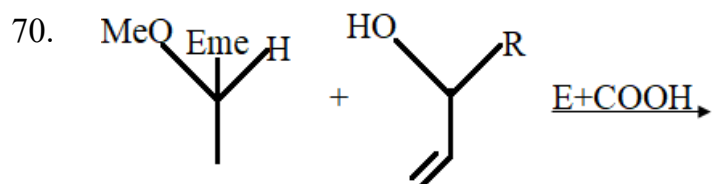


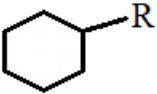
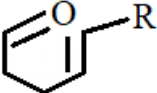
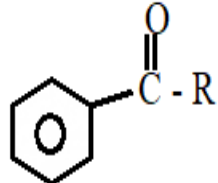
- (A) LiAlH
- (B) LiAlH_2
- (C) LiAlH_3
- (D) LiAlH_4



is an example of :

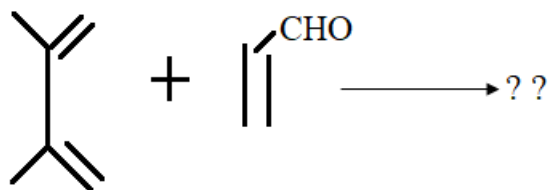
- (A) Cyclo addition
- (B) Electrocyclic
- (C) Sigmatropic
- (D) None of these



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

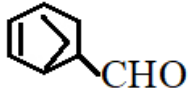
71. The conversion of O-aryl phenol from aryl allyl ether is an example of :
- (A) Sigmatropic
 (B) Cyclo addition
 (C) Grignard Reagent
 (D) None of these

72.



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

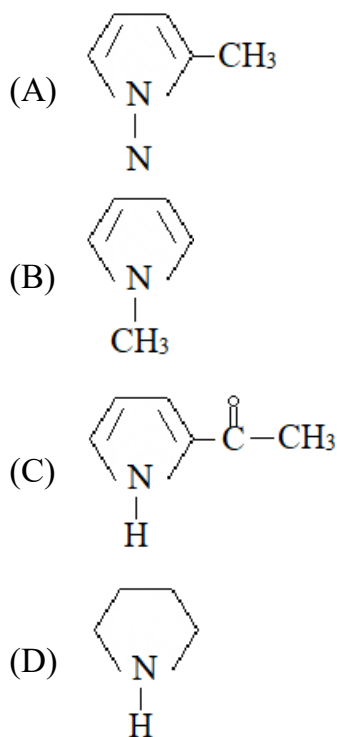
73. Short out the dienophile from the following : Maleic anhydride, cyclopentadiene, Benzene, Hexane :
- (A) Maleic acid
 (B) Cyclopentadiene
 (C) Benzene
 (D) Hexane

74. Short out the diene in following cyclopentadiene, Isoprene, Butadiene :
- (A) Cyclopentadiene
 - (B) Isoprene
 - (C) Butadiene
 - (D) All of these
75.  + $\text{H}_2\text{C}=\text{CHCHO} \xrightarrow[\text{Et } 25^\circ\text{C}]{\text{Et}_2\text{O}} ? ?$
- (A) 
 - (B) 
 - (C) 
 - (D) None of these
76. What will be product when Ethylene reacts with 1,3-butadiene ?
- (A) Cyclohexane
 - (B) Cyclohexene
 - (C) Cyclohexyne
 - (D) Benzene
77. Which types of heterocyclic compounds used for coloring agent ?
- (A) Pyrrole
 - (B) Pyridine
 - (C) Indole
 - (D) Furan
78. What will be effect of nitration on Indole. The nitro group attack on :
- (A) 1-Position
 - (B) 2-Position
 - (C) 3-Position
 - (D) 4-Position

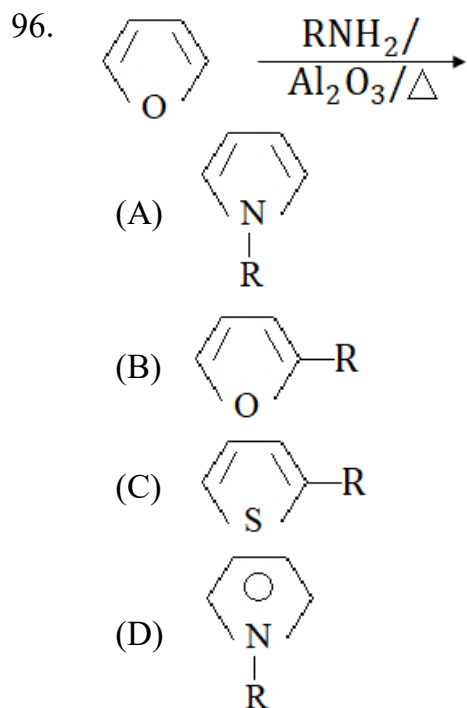
79. What will be the product when O-nitro toluene reacts with dimethyl oxalate ?
- (A) Indole
 - (B) Thiophene
 - (C) Pyrrole
 - (D) Pyridine
80. Acyl-o-toluidine is used for the preparation of :
- (A) Pyrrole
 - (B) Pyridine
 - (C) Furan
 - (D) Indole
81. Phenyl hydrazones of an aldehyde or ketone is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

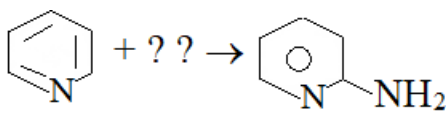
84. Nicotinic acid is prepared with the help of quinoline. What types of agent used :
- (A) Oxidizing
 - (B) Reducing
 - (C) Acidic
 - (D) Basic
85. 1,2,3,4- tetrahydro quinoline is prepared by :
- (A) Oxidizing agent
 - (B) Reducing agent
 - (C) Acids
 - (D) Bases
86. On which position nucleophile attack on quinoline :
- (A) 1-position
 - (B) 2-position
 - (C) 3-position
 - (D) None of the above
87. Quinoline $\xrightarrow{\text{Priedl Craft Rx}}$??
- (A) 1- methoxy quinoline
 - (B) 2- methoxy quinoline
 - (C) 4- methoxy quinoline
 - (D) 8- methoxy quinoline
88. Aniline reacts with β -ketoester, it gives :
- (A) 2-methyl quinoline
 - (B) 4-quinoline
 - (C) 2-methyl-4-quinoline
 - (D) None of these

89. Skraup synthesis is used for the preparation of :
- (A) Quinoline
 - (B) Pyrrole
 - (C) Pyridine
 - (D) Thiophene
90. The nature of Quinoline is :
- (A) Inert
 - (B) Solid
 - (C) Gas
 - (D) Hygroscopic colorless liquid
91. The compound pyrrolidine is found in :
- (A) Onion
 - (B) Carrot green
 - (C) Tomato
 - (D) Potato
92. What will be effect of friedel craft reaction on pyrrole is ?



93. What will be the effect of electrophilic reaction on pyrrole ?
- (A) One position
 - (B) Two position
 - (C) Five position
 - (D) Four position
94. What types of reactants used for the preparation of pyrrole through Paal-Knorr Method ?
- (A) Ketonic
 - (B) Aldehyde
 - (C) Alcoholic
 - (D) None of these
95. What types of Heterocyclic compound can be prepared from ammonium mucate :
- (A) Pyridine
 - (B) Indole
 - (C) Pyrrole
 - (D) None of these



97. The intermolecular hydrogen bond involved in :
- (A) Pyrrole
 - (B) Thiophene
 - (C) Indole
 - (D) Pyridine
98. Nicotinamide is used for curing the diseases of :
- (A) Fever
 - (B) T.B.
 - (C) Cancer
 - (D) Pellegra
99. Which one compound gives the order like chloroform :
- (A) Pyridine
 - (B) Pyrrole
 - (C) Thiophene
 - (D) Furans
100. 
- (A) NH_3
 - (B) NaNH_2
 - (C) NH_4OH
 - (D) N_2

Rough Work / रफ कार्य

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