



Aromatic Chemistry (2) 214 CHM

Special Chemistry Students

(ورقه إمتحانيه كامله)
الزمن: ساعتان

الإجابة النموذجية لامتحان كيمياء عضوية أروماتية (2)

الفرقة : الثانية

التاريخ : 2019 / 5 / 26

مجموعة : (ب)

الممتحن : د/ أمل محمد محمود

قسم : الكيمياء

كلية : العلوم

Choose the correct answer:

(40x1 Marks)

- Which of the following form polyester in heating with glycerine?
A- Carbolic acid B- phthalamide **C- phthalic anhydride** D- sodium phenoxide
- Treatment of salicylic acid with ethyl alcohol in the presence of H_2SO_4 gives
A- **Ethylsalicylate** B- ethylsalicylic acid C- salicylethanoate D- salicylic sulphonate
- Treatment of 2-hydroxybenzoic acid with phenol gives.....
A- Benzoylphenol B- phenylbenzoic acid C- picric acid **D- phenylsalicylate**
- Which of the following compounds has geometrical isomerism?
A- Propanoic acid B- phenylacetic acid **C- 3-phenylpropenoic acid** D- mandelic acid
- Which of the following is lactone?
B- Methylbenzoate B- 3-Pentanone **C- coumarin** D- ethoxybenzene
- Treatment of salicylic acid with conc. HNO_3 gives.....
A- 3-Nitrosalicylic acid B- 2-Nitrosalicylic acid **C- picric acid** D- no reaction
- Which of the following can be used to convert salicylic acid into benzoic acid?
A- **Zn** B- CuCN C - $KMnO_4$ D- $NaNO_2/HCl$
- Which of the following form alcohol during reaction with cinnamic acid?
A- Sodalime **B- $LiAlH_4$** C- $Na-Hg/H_2O$ D- H_2SO_4

9. Which of the following oxidize to give benzoic acid?
 A- salicylaldehyde B- *O*-xylene C- *p*-toluic acid **D- none of these**
10. Treatment of phenylacetic acid with $\text{Cl}_2/\text{FeCl}_3$ gives.....
 A- 2-Chlorophenyl acetic acid C-4-Chlorophenyl acetic acid
B- 3-Chlorophenyl acetic acid **D- both of A and C**
11. Oxidation of *o*-toluidine forms
 A- *O*-toluic acid **B- anthranilic acid** C- *p*-toluic acid D- salicylic acid
12. Treatment of benzene with acetyl chloride and AlCl_3 followed by treatment with I_2/NaOH forms sodium salt of
 A- Phenyl acetic acid **B- benzoic acid** C- mandelic acid D- *O*-toluic acid
13. Treatment of phenyl acetic acid with KMnO_4 gives
 A- **Benzoic acid** B- potassium phenyl acetate C- mandelic acid D- none of these
14. Which of the following gives odour of phenol in heating with sodalime?
 A- Salicylic acid B- *p*-hydroxybenzoic acid C- 3-hydroxybenzoic acid **D- all previous answers**
15. Treatment of anthranilic acid with NaNO_2/HCl followed by hydrolysis gives
 A- **Salicylic acid** B- anthracene C- *O*-toluic acid D- picric acid
16. Which of the following compounds has chiral carbon?
 A- Homophthalic acid B- acetic acid C- isophthalic acid **D- mandelic acid**
17. Treatment of phenyl acetic acid with Cl_2/UV proceed *via*.....
 A- Electrophilic substitution reaction C- Nucleophilic substitution reaction
 B- Elimination reaction **D- Free radical substitution reaction**
18. Which of the following can be used to differentiate between benzoic acid and $\text{C}_6\text{H}_5\text{OH}$?
 A- **NaHCO_3** B- H_2SO_4 C- HNO_3 D- $\text{H}_2\text{SO}_4/\text{HNO}_3$
19. Treatment of phthalide with potassium cyanide followed by hydrolysis gives.....
 A- Phthalimide B- benzylcyanide **C-homophthalic acid** D- Phthalamide
20. Styrene can be formed by treatment ofwith NaOH/CaO ?
 A- Acetylsalicylic acid **B- cinnamic acid** C- phenyl acetic acid D- carbolic acid
21. Electrophilic substitution of naphthalene occurs mainly at carbon atom in position.
A- α B- β C- 2 D- all of them
22. When anthracene treated with Conc. HNO_3 in acetic anhydride, anthracene was obtained.
 A- 9-nitro B- 1-nitro C- 9,10-dinitro **D- (a)&(c)**
23. Phenanthrene has resonance structures.
 A- Two B- Three C- Four **D- Five**
24. On reduction of anthraquinone with Zn/HCl yields.....
 A- Anthranol B- Anthrone C- Oxanthrone **D- Bianthryl**
25. Fridel-craft acylation of naphthalene with $\text{CH}_3\text{COCl}/\text{HCl}$ in nitrobenzene as solvent, acetyl naphthalene was obtained.
 A- α **B- β** C- 1 D- (a)&(c)
26. Which of these compounds used for treating with Se/Δ to obtain naphthalene?
A- Tetralin B- α -Tetralone C- β -Benzoylpropionic acid D- γ -Phenyl butyric acid

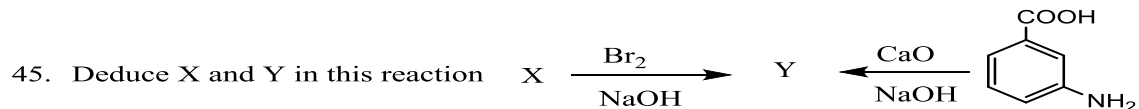
27. Reduction of naphthalene with H_2/Ni ,was obtained.
 A- Tetralin **B- Decalin** C- 1,4-Dihydronaphthalene D- α -Tetralone
28. When phenanthraquinone is heated in the presence of NaOH,was obtained.
 A- Diphenic acid **B- Diphenylene glycolic acid** C- Diphenyl D- Diphenyl methane
29. On distillation of diphenic acid with sodalime yields
 A- Diphenyl methane **B- Diphenyl** C- Phenanthrene D- Anthraquinone
30. By passing stilbene through a red-hot tube, was obtained.
 A- Naphthalene **B- Phenanthrene** C- Anthracene D- Anthraquinone
31. When naphthalene treated with sulphuric acid at $165^\circ C$, naphthalene sulphonic acid was obtained.
 A- α - **B- β -** C- 1- D- None of them
32. Diphenylene glycolic acid undergoes decarboxylation gives
A- Fluorenone B- Anthrone C- Diphenyl D- Diphenyl methane
33. 1,4-Dihydronaphthalene was obtained by reaction of naphthalene with
 A- H_2/Ni **B- Na/C_2H_5OH** C- $Na/C_5H_{11}OH$ D- None of them
34. Nitration of phenanthrene gives mixture of mononitro-phenanthrene.
 A- Two B- Three C- Four **D- Five**
35. Naphthalene undergoes oxidation with $K_2Cr_2O_7/H_2SO_4$, was formed.
A- Phthalic acid B- Phthalic anhydride C- Naphthaquinone D- α -Naphthoic acid
36. Triphenyl carbinol is
 A- Weak acid **B- Weak base** C- Strong acid D- Strong base
37. The sulphonation of anthracene with Conc. H_2SO_4 at low temperature, anthracene sulphonic acid was obtained.
A- 1- B- 2- C- 9- D- 10-
38. Diphenic acid was obtained by oxidation ofby peroxide.
A- 9,10-Phenanthraquinone B- Naphthalene C- Anthracene D- None of them
39. Phthalic anhydride was obtained by oxidation of naphthalene with
 A- CrO_3/CH_3COOH B- $Na_2Cr_2O_7/H_2SO_4$ **C- $V_2O_5/500^\circ C$** D- $KMnO_4$
40. Naphthalene undergoes reduction with sodium in isopentyl alcohol to form
A- Tetralin B- Decalin C- 1,4-Dihydronaphthalene D- None of them

Choose the correct answer:**(20x2 Marks)**

41. Heating of phthalic acid with phenol and sulfuric acid gives.....
 A- **Colorless product** B- phthalic sulphonic acid C- addition product D- homophthalic acid
42. Which of the following is the best to distinguish between salicylic acid and benzoic acid?
 A- $NaHCO_3$ **B- Br_2/H_2O** C- H_2O D- none of these
43. Number of possible isomers of carboxylic acids of M. F.= $C_8H_8O_2$ having aromatic character is...
 A- 2 B- 3 **C- 4** D- 5

44. Heating of benzene sulphonic acid with sodium hydroxide followed by treatment with carbon dioxide gives

- A- Benzoic acid B- mandelic acid C- benzyl alcohol **D- salicylic acid**



- A- X is benzoic acid, Y is aniline **C- X is benzamide, Y is aniline**
 B- X is anthranilic acid, Y is sodium benzoate D- X benzonitrile, Y is aniline
46. Heating of phthaloyl chloride with AlCl_3 followed by reduction with Zn/HCl gives.....
 A- Phthalyl chloride B- as-phthaloylchloride C- phthalaldehyde **D- phthalide**
47. The reaction of benzaldehyde with ethylacetate and sodium ethoxide proceed via.....
 A- Electrophilic substitution reaction C- Nucleophilic substitution reaction
B- Addition and elimination reaction D- Free radical substitution reaction

48. Treatment of benzaldehyde with propanone and base followed by treatment with I_2/NaOH gives.

- A- Benzoylpropane **B- cinnamic acid** C- p-toluic acid D- mandelic acid

49. **Treatment** of potassium phthalimide with chloro acetic acid followed by hydrolysis gives....

- A- Aminoethanoic acid** B- phthaloyl chloride C- phthalyl acetate D- phthalamide

50. Treatment of benzylmagnesium bromide with formaldehyde followed by hydrolysis gives....

- A- Phenylacetic acid **B- 2-phenylethanol** C- benzyl alcohol D- amyl alcohol

51. Which of the following compounds is the final product when naphthalene heated with $\text{Conc.H}_2\text{SO}_4$ at 165°C followed by neutralization with NaOH , then NaOH at 300°C (fuse) and finally hydrolysis in acidic media?

- A- α -Naphthol **B- β -Naphthol** C- α -Naphthoic acid D- β -Naphthyl amine

52. Diphenyl ethane was obtained by condensation of two moles of benzene with in the presence of $\text{Conc.H}_2\text{SO}_4$.

- A- Acetaldehyde** B- Formaldehyde C- Dichloroethane D- None of them

53. Anthracene undergoes addition and electrophilic substitution reactions at

- A- C-9 B- C-10 C- C-1 **D- (a)&(b)**

54. When naphthalene was treated with $\text{Br}_2/\text{FeBr}_3$, then treated with Mg/ether , followed by reaction with CO_2 and finally hydrolysis in acidic media, the product is

- A- α -Naphthyl amine B- β -Naphthoic acid **C- α -Naphthoic acid** D- β -Naphthyl amine

55. Naphthalene undergoes oxidation with $\text{V}_2\text{O}_5/500^\circ\text{C}$, followed by reaction with ammonia then NaOH followed by Hofmann reaction and finally treated with HCl to give.....

- A- Salicylic acid **B- o-Aminobenzoic acid** C- o-Hydroxybenzaldehyde D- None of them

56. Anthraquinone was prepared by Diel's-alder reaction between 1,4-naphthaquinone with.....
A- Ethylene glycol B- Glycerol **C- Butadiene** D- Propene
57. When naphthalene was condensed with succinic anhydride, the final product is.....
A- Anthracene B- Anthrone **C- Phenanthrene** D- Anthraquinone
58. 9,10-Anthraquinone dioxime was obtained by reaction anthraquinone with
A- NH₃ **B. NH₂OH/pyridine** C. Urea D. Aniline
59. When 1-Naphthyl amine treated with NaNO₂/HCl, then CuCN and followed by hydrolysis in acidic media, the product is
A- α-Naphthol B- β-Naphthol **C- α-Naphthoic acid** D- β-Naphthoic acid
60. Substitution on naphthalene at β-position occurs only when the reaction is carried at
A- Low temperature B- High temperature C- Bulkier solvents are used **D- (b)&(c)**