



ORGANIC CHEMISTRY MCQ

1. MCQS
2. Tick mark the appropriate choice.
3. Aromatic compounds:
 - a. are cyclic
 - b. must have conjugation in cyclic ring
 - c. must have $[4n + 2]$ pi electrons
 - d. All of above
4. Which one of these is not aromatic?
 - a. Tropylium ion
 - b. N-methyl pyrolium salt
 - c. Cyclopropenyl ion
 - d. Thiophene
5. Who discovered benzene?
 - a. Michael Faraday
 - b. Mitscherlich
 - c. August Kekule
 - d. David Huckel
6. Which of the following statements regarding electrophilic aromatic substitution is wrong?
 - a. Sulphonation of toluene is reversible.
 - b. Friedel-Crafts alkylation of benzene may be reversible.
 - c. (c) Friedel-Crafts alkylation with primary alkyl chloride may involve rearrangement.
 - d. Friedel-Crafts acylation of nitrobenzene readily gives a meta substitution product.
7. Which one of these statements regarding Friedel-Crafts reactions is wrong?
 - a. Alkylation of benzene with an alkyl chloride requires only a catalytic amount of a Lewis acid such as aluminum chloride.
 - b. Alkylation of benzene with an alcohol requires only a catalytic amount of a Bronsted acid such as phosphoric acid



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- c. Acetylation of benzene with acetyl chloride requires only a catalytic amount of a Lewis acid.
- d. Acetylation of benzene with acetic anhydride requires more than one equivalent of a Lewis acid.
8. On heating aqueous solution of benzene diazonium chloride gives:
- Benzene
 - Chlorobenzene
 - Hydroxy benzene
 - Aniline
9. Sodium benzene sulphonate on reaction with NaOH , followed by acidic hydrolysis, gives following compound:
- Phenol
 - Benzoic acid
 - Benzene
 - Benzene sulphonic acid
10. Which one of these is a commercial method of preparation for phenol?
- Dows process
 - From diazonium salt
 - By decarboxylation of salicylic acid
 - Hock method
11. Libermann's test is qualitative test for to formation of In this colour is obtained, due
- Phenol, blue, indophenols salt
 - Phenol, red, indophenols salt
 - Phenol, blue, indophenol
 - Phenol, blue, quinine oxime



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12. Reaction of aqueous sodium hydroxide and chlorobenzene at high temp. and pressure gives:
- o-chlorophenol
 - a-chlorophenol
 - Phenol
 - No reaction
13. The phenol group is on nitration.
- ortho-directing
 - para-directing
 - meta-directing
 - ortho- and para-directing
14. The $-Cl$ group is..... group and causes..... orientation.
- activating, ortho
 - activating, para
 - deactivating, ortho and para
 - deactivating, meta
15. The order of reactivity for aromatic electrophilic substitution reaction in (i) benzene, (ii) anisole, (iii) nitrobenzene is:
- $i < ii < iii$
 - $i > ii > iii$
 - $i < ii < iii (>)$
 - $ii > iii > i$
16. Which one of these is not a deactivating group?
- $-Cl$
 - $-CN$
 - $-COOH$
 - $-NH_2$



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17. Phenolphthalein is obtained by heating phenol with conc. H₂SO₄, and which of the following reactants?
- Benzyl alcohol
 - Acetic anhydride
 - Benzoic acid
 - Phthalic anhydride
18. Salicylaldehyde can be prepared from which of the following reactants:
- Phenol and chloroform
 - Phenol, chloroform and sodium hydroxide
 - Phenol, carbon tetrachloride and NaOH
 - Phenol, carbon tetrachloride
19. Which of the following products is obtained when phenol reacts with excess of bromine water?
- m-bromophenol
 - o-bromophenol
 - o- and p-bromophenol
 - 2,4,6-tribromophenol
20. Which of the following products is obtained when phenol reacts with bromine in carbon disulphide solution at low temperature?
- m-bromophenol
 - o- and p-bromophenol
 - p-bromophenol
 - 2,4,6-tribromophenol
21. What is the major product obtained when phenol reacts with sodium hydroxide and carbon dioxide?
- Benzoic acid
 - Salicylaldehyde
 - Salicylic acid
 - Phthalic acid



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22. Bakelite is formed when phenol react with which of the following reactants?

- a. Formaldehyde
- b. Hydrogen chloride
- c. Nitric acid
- d. Sulphur trioxide

23. What is the general formula of diazonium salt?

- a. $RN_2^+X^-$
- b. RN
- c. RX
- d. RN_2HSO

24. What is the known name of the below given reaction?

- a. Gattermann's reaction
- b. Sandmeyer's reaction
- c. Dhydrogenation reaction
- d. Esterification reaction

25. Which one of these is not a saturated fatty acid?

- a. Linoleic acid
- b. Arachidonic acid
- c. Oleic acid
- d. Palmitic acid

26. The iodine value of drying oil is:

- a. 140
- b. >90
- c. >100
- d. >110

27. Ester value indicates:

- a. Fatty acid present as ester
- b. Free fatty acid



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- c. Total fatty acids
d. None of them
28. Acetyl number indicates:
- Saturated fatty acid
 - Unsaturated fatty acid
 - Hydroxy fatty acid
 - Cyclic fatty acid
29. Cycloalkanes are associated with the general formula, where r is number of ring:
- C_{2n-2}
 - C_{2n-1}
 - C_nH_{2n-1-r}
 - $C_nH_{2(n+1-r)}$
30. The observed order of stability for cycloalkanes is:
- Cyclohexane > cyclopentane > cyclobutane > cyclopropane
 - Cyclopentane > cyclohexane > cyclobutane > cyclopropane
 - Cyclopropane > cyclohexane > cyclobutane > cyclopentane
 - Cyclopropane > cyclobutane > cyclohexane > cyclopentane
31. Identify the incorrect statement regarding cycloalkanes.
- These have sp^3 hybridized carbons (b) These have tetrahedral bond angles
 - Stability of the cycloalkanes varies directly with their
 - respective size
 - These undergo nucleophilic substitution reactions
32. Identify the compound with the highest ring strain.
- Cycloethane
 - Cyclopropane
 - Cyclobutane
 - Cyclopentane



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33. Which among the following compounds explodes on contact with oxygen?

- a. Cyclopropane
- b. Cyclobutane
- c. Cyclopentane
- d. Cyclohexane

34. Identify the incorrect statement regarding cyclohexane.

- a. It is non-polar
- b. It serves as an organic solvent
- c. It is a hydrophilic hydrocarbon
- d. It is commercially used for variety of applications

35. Which among these is the simplest example for polycyclic arenes?

- i. Benzacephenanthryle
- ii. Naphthalene
- iii. Pyrene
- iv. Dibenz-anthracene

36. Naphthalene on oxidation with chromic acid gives:

- a. 1,4-naphthaquinone
- b. Naphthalene-1-acctic acid
- c. Phthalic acid
- d. Naphthalenc-2-acetic acid

37. At what position nitration takes place in anthracene?

- a. C-1
- b. C-4
- c. C-9
- d. C-8



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38. Phenanthrene on ozonolysis gives:

- a. Dialdehyde
- b. 2,2-Biphenyl carbaldchye
- c. 2,2-Biphenyl dicarboxylic acid
- d. 2-biphenyl aldchye

39. Choose the correct order related to acidic strength

- a) Phenol > water > ethyl alcohol
- b) Ethyl alcohol > water > phenol
- c) Ethyl alcohol > phenol > water
- d) Water > phenol > ethyl alcohol

40. F) Choose correct order of acidity for following.....

- a) o-cresol > p-cresol > m-cresol
- b) p-cresol > o-cresol > m-cresol
- c) m-cresol > p-cresol > o-crèsol
- d) m-cresol > o-cresol > p-cresol

41) Difference between torsional and angle strain in cycloalkanes

- i) Torsional strain refer to size of the ring, angle strain refers to unfavorable orbital overlap
- ii) Torsional strain refer to the size of the ring, angle strain refers to eclipsed CH₂ groups
- iii) Torsional strain refer to eclipsed CH₂ groups, angle strain refers to the C-C-H bond angles
- iv) Torsional strain refers to eclipsed CH, group, angle strain refer to unfavorable orbital overlap

42) Identify the formula for cycloalkanes

- i) C₂H_{2n+2} ii) C_nH_{2(n+2)}
- iii) C₂H_{2n} iv) C_nH_{2(n-2)}

43) Select the chemical formula of saccharin



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- (i) $C_7H_6NO_3S$ (ii) $C_7H_5NO_3S$
(iii) $C_7H_4NO_3S$ (iv) $C_8H_7NO_4S$

44) Chloramine used as....

- i) preservative ii) artificial sweetener
iii) disinfectant iv) flavouring agent

45) Mention the following most acidic

- (i) p-nitrophenol (ii) 2,4,6-trinitrophenol
(iii) p-cresol (iv) Phenol