7 HYDROCARBON

1. **Alkenes undergo, (IBA 200)**
   A. Addition reactions
   B. Substitution reactions
   C. Both addition and substitution
   D. None of the above

2. **In $CH_2 = CH_2$, the molecule contains: (IBA 200)**
   A. 2 sigma bonds and 2 Pi bonds
   B. 2 sigma bonds and 4 Pi bonds
   C. 5 sigma bonds and 1 Pi bonds
   D. 6 sigma bonds
   E.

3. **Friedel - craft reaction classified as (IBA 200)**
   A. Halogenations and Hydrogenation
   B. Akylation and Accylation
   C. Hydrogenation and Halogenations
   D. Nitration

4. **The compound formed by the action of the water on the calcium carbide is: (IBA 2002)**
   A. Ethane
   B. Ethene
   C. Acetylene
   D. Methane

5. **Methane is obtained by which following method: (IBA 2002)**
   A. Electrolysis of sodium acetate
   B. Electrolysis of aluminum carbide
   C. Heating sodium acetate with soda lime
   D. All of these

6. **The following reactions is an example of (IBA 2002)**

$$C_3H_8 + 2Cl_2 \longrightarrow C_3H_6Cl_2 + 2HCl$$

   A. Addition reaction
   B. Reduction reactionn
   C. Oxidation reaction
   D. Substitution reaction

7. **Which of the following molecules has the strongest carbon to carbon bond? (DMC 2005)**
   A. C_2H_2
   B. C_2H_4
   C. C_2H_6
   D. C_3H_8

8. **Alkenes is the first: (DMC 2005)**
   A. Saturated hydrocarbon
   B. Unsaturated hydrocarbon
   C. Aromatic Hydrocarbon
   D. Super saturated Hydrocarbon

9. **The first alkane is: (DMC 2005)**
   A. Methane
   B. Ethane
   C. Halothane
   D. Methene

10. **Alkanes are also known as: (DMC 2006)**
    A. Saturated Hydrocarbons
    B. Unsaturated Hydrocarbons
    C. Parrafins
    D. None of the above

11. **Benzene doesn't show any one of the following: (DMC 2006)**
    A. Oxidation
    B. Addition
    C. Elimination

D. Substitution

12. Which one is different from the others? (DMC 2007)

A. Propane
B. Benzene
C. Ethane
D. Methane

13. On oxidation with $KMnO_4$; ethyne doesn't form which of the following: (DMC 2007)

A. Formic Acid
B. Oxalic Acid
C. C. Glycol
D. CO2-

14. In ethane, which of the following is correct? (DMC 2008)

A. Its p orbital is hybridized
B. Its s orbital is hybridized
C. Its p and s orbital both are
D. Its p and s both are unhybridized

15. Nascent hydrogen used in the formation of methane, is obtained from the reaction of (DMC 2009)

A. $NaHCO_3$ with Zn
B. HCI with Zn
C. KOH with Zn
D. H_2O with Zn
E. CH_3I with Zn

16. Mustard gas is formed by the treatment of Sulphur monochloride with: (DMC 2010)

A. Ethane
B. Methane
C. Ethene
D. Ethylene glycol
E. Chloro Ethane

17. Benzene can be prepared..... (DMC 2011)

A. From Petroleum
B. From Coal
C. From Acetylene
D. From Phenol
E. All of the above

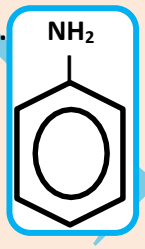
18. The electrophilic reactions of Benzene are: (DMC 2011)

A. Halogenation
B. Nitration
C. Sulphonation
D. Alkylation and acylation
E. All of the above

19. $CH \equiv CH + 2AgNO_3 \longrightarrow AgC \equiv Cag + 2HNO_3$

Represents_____property of acetylene. (DMC 2012)

A. basic
B. acidic
C. dehydrating
D. physical
E. none of the above

20. 

($-NH_2$) on benzene ring is: (DMC 2012)

A. Meta-directing and deactivating group
B. Ortho-para directing and deactivating group
C. Othro-para directing and activating group
D. Orthro-directing and activating only
E. Para-directing and deactivating only

21. SP^3 hybridization in CH_4 _____ gives it geometry. (DMC 2012)

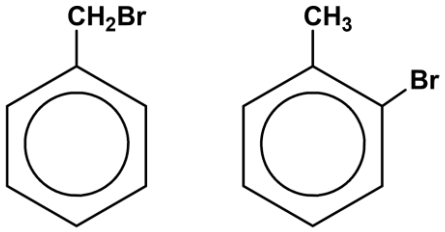
A. Linear
B. Co planner
C. Tetra hedral
D. Trigonal pyramid
E. Octahedral

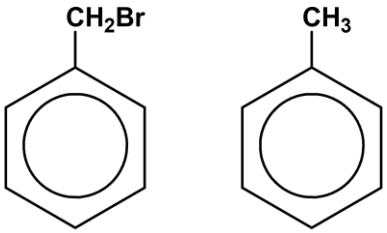
22. Alkanes having five to seventeen carbon atoms per molecule are: (DMC 2013)

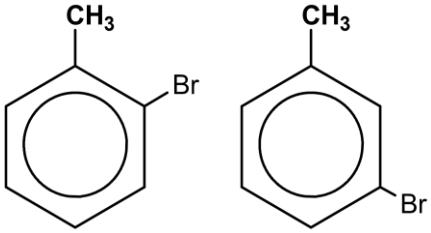
A. liquids
B. Solids
C. gases
D. semi solid wax

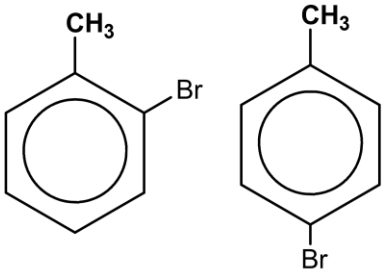
23. When methylbenzene is treated with

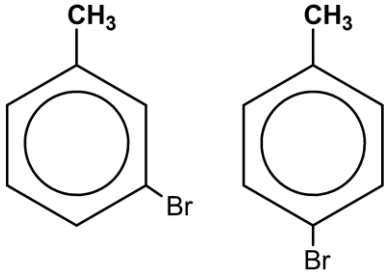
bromine in the presence of a catalyst, a mixture of two monobromo isomers is formed. What are the structures of these two isomers? (DMC 2013,2015)

A. 

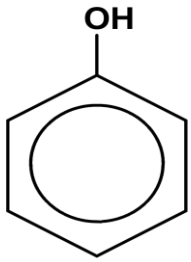
B. 

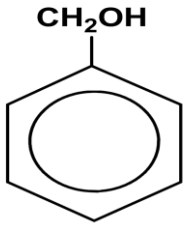
C. 

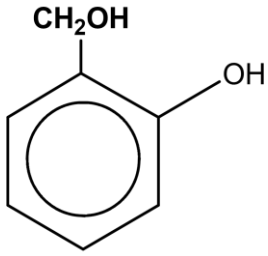
D. 

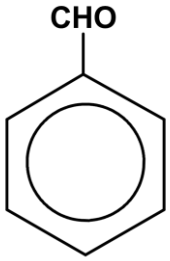
E. 

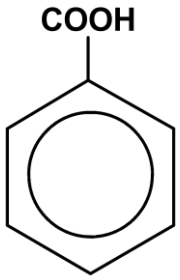
24. Which one of the following formulae represents the organic compound formed when methylbenzene is heated under reflux with alkaline potassium manganate (VII) solution and the mixture then acidified? (DMC 2013)

A. 

B. 

C. 

D. 

E. 

25. In a double-bonded carbon atom (C = C): **(DMC 2013)**

A. hybridization occurs between the s-orbital and one p- orbital

B. hybridization occurs between the s-orbital and two p-orbitals

C. hybridization occurs between the s-orbital and three p-orbitals

D. no hybridization occurs between the s and p-orbitals

E. hybridization occurs between two s-orbitals and one p-orbital

26. X deactivates the ring and directs ortho and para in; X is **(DMC 2014)**

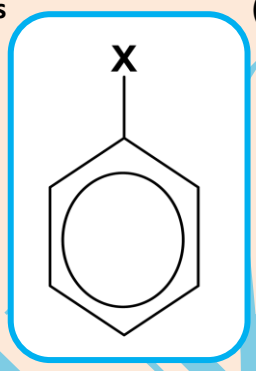
A. OH

B. Br

C. NH_3^+

D. NO_2

E. NH_2



27. In the reaction, $R - C \equiv C - R \xrightarrow{?}$ **the reagent used to convert alkyne into trans alkene is:** **(DMC 2014)**

A. Ni

B. Lindlar catalyst

C. B_2H_6/CH_3COOH

D. Li/NH_3

E. C_6H_6

28. In which of the following compound carbon uses sp^3 hydride orbitals for bond formation?

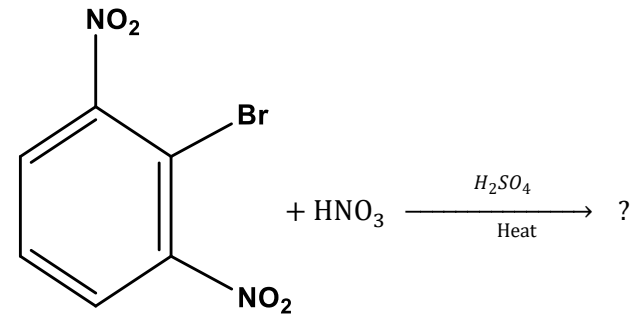
A. C_2H_4

B. C_2H_4

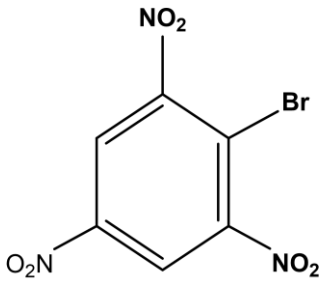
C. $(CH_3)_3COH$

D. $CH_2=C=O$

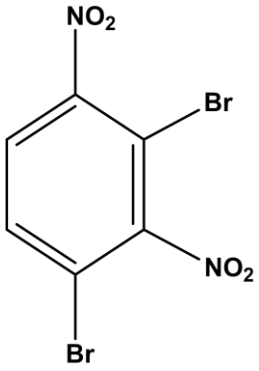
29. What is the major product of nitration reaction below? **(DMC 2015)**



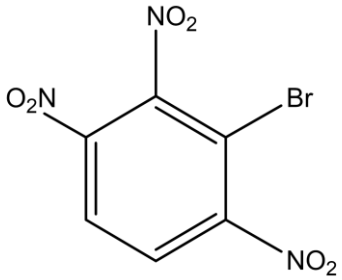
A.



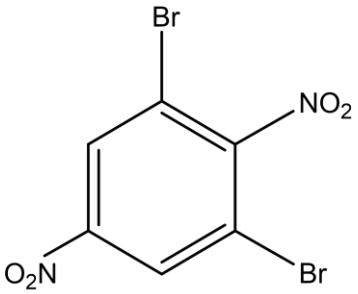
B.



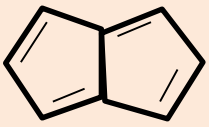
C.



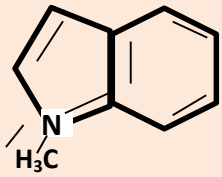
D.



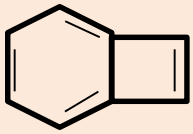
30. Which of the molecules shown below are aromatic? (DMC 2015)



Compound I



Compound II



Compound III

A. I only
B. II only
C. I and III only
D. I, II and III

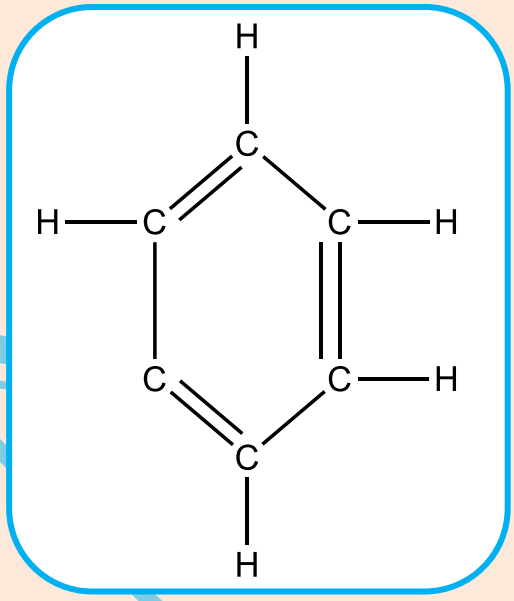
31. Physical properties of Ethyne is/are: (DMC 2015)

A. It is colorless gas with sweet smell
B. It is spardenyertuare air water
C. It is less dense than air
D. It explodes on compression to a liquid because of unstable nature
E. All of the above

32. All are dehydrating agents for alcohols to produce alkene except: (DMC 2016)

A. Al_2O_3
B. P_2O_5
C. Dilute H_2SO_4
D. H_3PO_4

33. Which of the following element is needed to add in the given diagram to make it aromatic benzene? (DMC 2016)



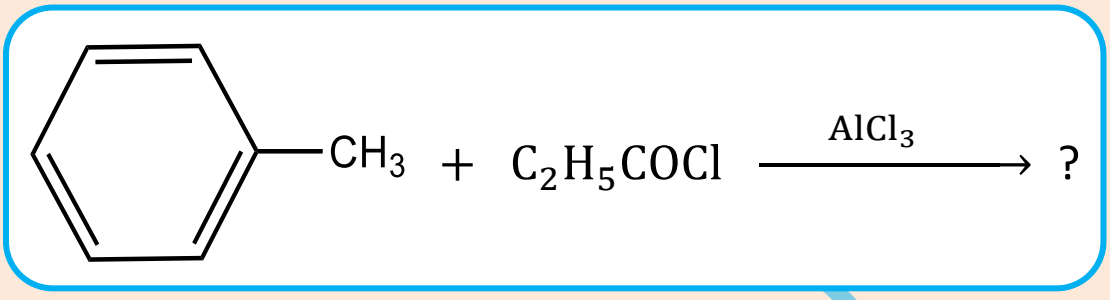
A. $-\mathbf{H}$
B. $-\mathbf{OH}$
C. $-\mathbf{CH}$
D. $-\mathbf{H_2}$

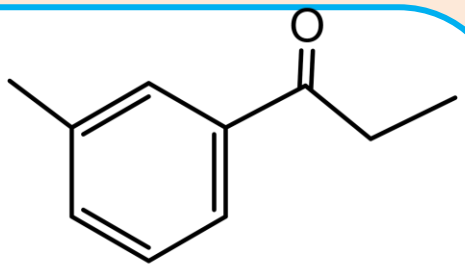
34. Which structures show a primary alcohol that cannot be dehydrated to form an alkene? (DMC 2016)

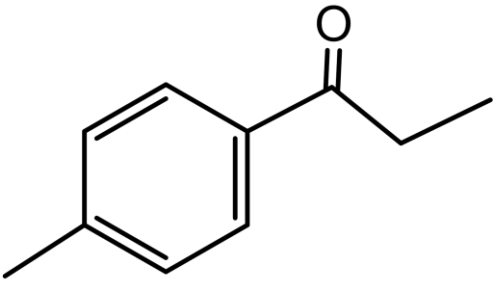
I. $\mathbf{CH_3OH}$
II. $\mathbf{CH_3CH_2OH}$
III. $\mathbf{CH_3CH\,(OH)\,CH3}$

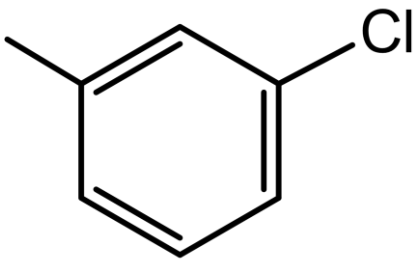
A. Only I
B. Only I and II
C. Only II and III
D. Only I and III

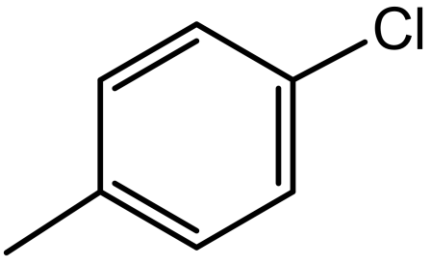
35. What would be the major product of the following reaction? (NTS 2017)



A.


B.


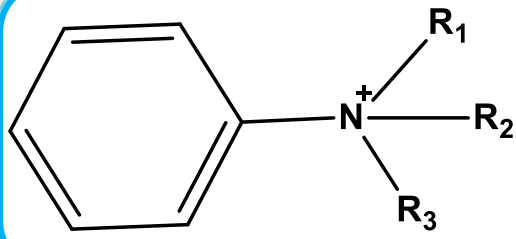
C.


D.


36. What happens when one mole of ethane is mixed in the dark at room temperature with six moles of chlorine? (NTS 2017)

A. There is no reaction.
B. CH_3CH_2Cl and HCl are formed.
C. CH_3CCl_3 and HCl are formed
D. CCl_3CCl_3 and HCl are formed.
E. Carbon and HCl are formed.

37. How would an ammonium group effect on benzene ring for subsequent reactions? (NTS 2017)



A. deactivate the ring; meta directing
B. activate the ring, ortho-para directing
C. deactivate the ring; ortho-para directing
D. activate the ring; meta directing

38. Which one of the following is NOT a meta directing group? (NTS 2018)

A. COOH
B. SO3H
C. CHO
D.OH

39. In which of the following nitrogen compounds, N has the higher oxidation state? (NTS 2018)

A. NH2OH
B. N3H4
C. HNO3
D. NH3

40. Alkylation and acylation of Benzene is done by: (LMC 2014)

A. Friedel-Craft reaction
B. Down's process
C. Wurtz reaction
D. Hofmann reaction

41. How do amine groups direct subsequent reactions in the benzene ring? (LMC 2014)

A. Deactivate the ring, ortho- or para-directing
B. Activate the ring, meta-directing
C. Activate the ring, ortho- or para-directing
D. Deactivate the ring, meta-directing

42. Identify X in the reaction given below:

$$CH_2 = CH_2 + HBr \xrightarrow{\cdot} X$$

(LMC 2014)

A. CH_2CH_2Br
B. CH_3CHBr
C. CH_3CH_2Br
D. CHCHBr

43. IUPAC name of mustard gas is: (LMC 2014)

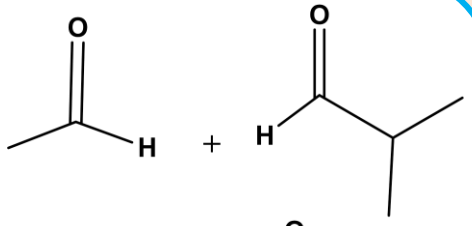
A. β, β' dichloro di-ethyl sulphide
B. β, β' dichloro ethyl sulphide
C. β, β' dichloro tri-ethyl sulphide
D. β, β' chloro di-ethyl sulphide
E. dichloro di-ethyl sulphide

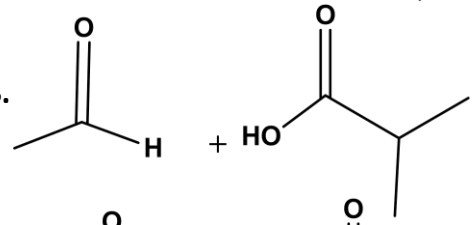
44. The general formula of Alkene Series (unsaturated) is: (LMC 2013,2011)

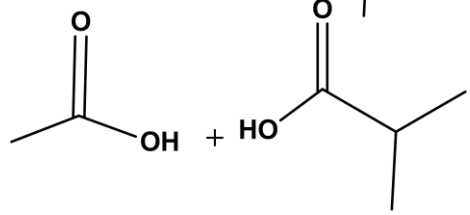
A. C_nH_{2n+2}
B. C_nH_{2n-2}
C. C_nH_{2n}
D. C_nH_{2n-6}

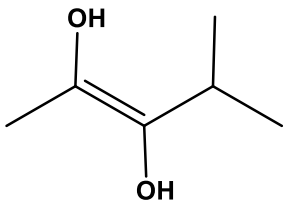
45. What are the products of the following reaction? (LMC 2013)

$$CH_3-C\equiv C-CH \xrightarrow[2)\ H^+]{1)\ \text{hot } KMnO_4,OH^-} ?$$
(with CH_3 groups on both carbons)

A. 

B. 

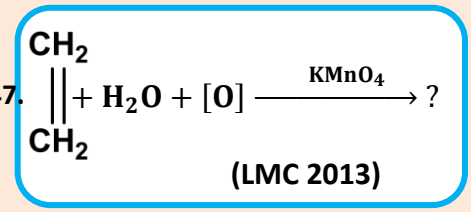
C. 

D. 

46. The hybridization between C_2H_4 (ethene) is: (LMC 2013)

A. sp^3 -sp^3
B. sp^2 -sp^2
C. sp -sp
D. sp^2 -sp
E. sp^2 -s

47.



(LMC 2013)

A. Ethanol
B. Ethanal
C. Ethylene Glycol
D. Ethane
E. Mustard gas

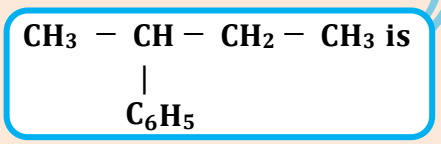
48. Benzene is the simplest example of hydrocarbons called: (LMC 2013)

A. Acyclic
B. Aromatic
C. Open chain
D. None of the above

49. Ethene is the first member of: (LMC 2011)

A. Alkene series
B. Saturated hydrocarbons
C. Aromatic hydrocarbons
D. Alkyne series Alcohols

50. The IUPAC name of the compound (LMC 2011)



A. 2-cyclohexyl butane
B. 2-phenyl butane
C. 3-cyclohexyl butane
D. 3-phenyl butane
E. 4-phenyl butane

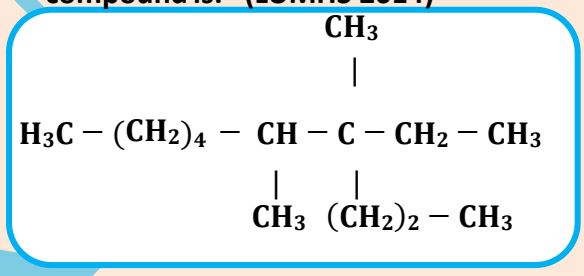
51. Heating phenol with Zn will yield: (LMC 2011)

A. Benzoic acid
B. Benzene
C. Phenoxide acid
D. Chloro ethane
E. cyclohexane

52. The addition reactions shown by alkenes are the examples of: (LUMHS 2014)

A. Electrophilic addition reactions
B. Nucleophilic addition reactions
C. Free radical addition reactions
D. The formation of carbon ion as the intermediate
E. None of the above

53. IUPAC name of the given compound is: (LUMHS 2014)



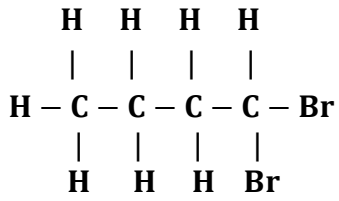
A. 6, 7-Dimethyl-7-n-propy! nonane
B. 4, 5-Dimethyl-4-ethyl decane
C. 3, 4-Dimethyl-3-n-propyl nonane
D. 6, 7-Dimethyl-7-ethyl decane
E. 6, 7-Dimethyl-7-ethyl octane

54. Halogenation of benzene can be done by: (LUMHS 2014)

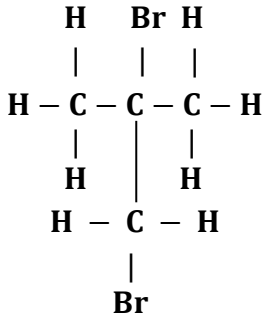
A. $FeCl_3$
B. $FeBr_3$
C. $AlCl_3$
D. $AlBr_3$
E. All of the above

55. Which one of the following compounds could be formed by the action of bromine on an alkene of formula C_4H_8? (LUMHS 2013)

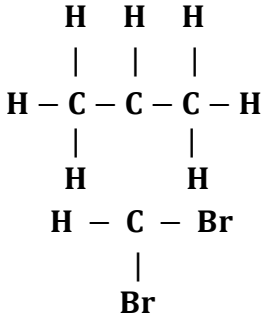
A.



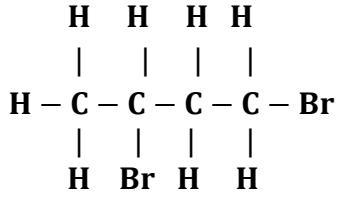
B.



C.



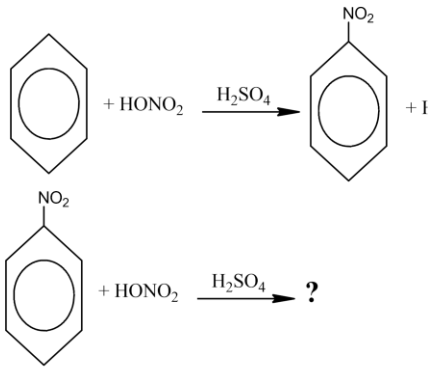
D.



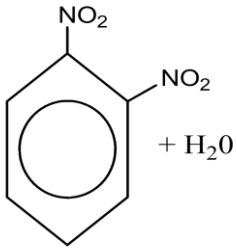
56. The correct IUPAC name of diethyl acetylene is (LUMHS 2013)

A. 1,2-diethyle ethyne
B. 3 – hexyne
C. 2 – hexyne
D. 1 – pentyne

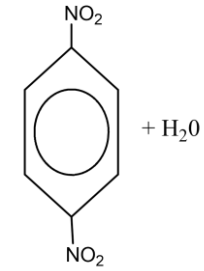
57. Complete the reaction: (LUMHS 2012)



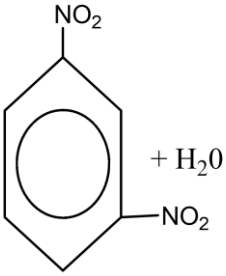
A.



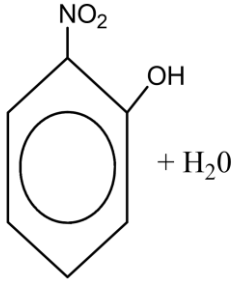
B.



C.



D.



E. None of the above

58. The polymerization of three acetylene molecules in the presence of organo nickel yields_____. (LUMHS 2012)

A. vinyl acetylene
B. ethane
C. cyclo hexane
D. benzene
E. plastic

59. All of the following are Electrophilic Reactions of Benzene EXCEPT: (LUMHS 2012)

A. Nitration
B. Halogenation
C. Sulphonation
D. Alkylation and Acylation by Friedel-Craft reaction
E. Conjugation

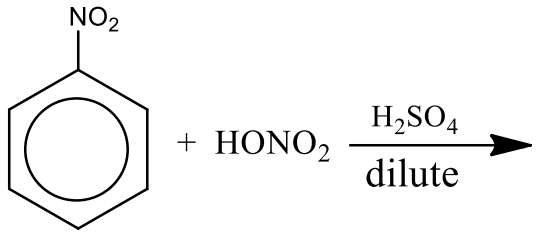
60. Methane when heated in the absence of oxygen, gives a by-product "carbon black" which is used in: (LUMHS 2011)

A. rubber industry
B. pigment for paints
C. type writer carbon papers
D. pigment for plastic
E. all of the above

61. When sodium acetate is heated with sodalime, a hydrocarbon is obtained, what is that? (LUMHS 2011)

A. Methane
B. Ethane
C. Ethene
D. Ethyne
E. Benzene

62.



(LUMHS 2009)

A. ortho dinitro benzene and water
B. para dinitro benzene and water
C. meta dinitro benzene and water
D. 2, 4, 6, trinitro benzene
E. None of the above

63. Which one of the following is a step in the reaction between methane and chlorine? (LUMHS 2009)

A. $Cl_3 \rightarrow 2Cl$
B. $CH_3 + Cl \rightarrow CH_3Cl$
C. $CH_3 + HCl \rightarrow CH_3Cl + H$
D. $CH_3Cl + Cl_2 \rightarrow CH_2Cl_2 + HCl$
E. $CH_2Cl + HCl \rightarrow CH_3Cl + Cl$

64. Polyvinyl Chloride is an industrial polymer prepared from (LUMHS 2009)

A. Ethene
B. Ethyne
C. Ethane
D. Chlorine
E. None of the above