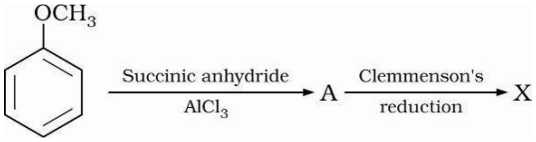
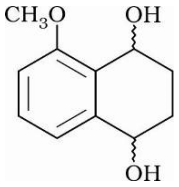
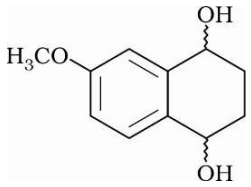
Date Planned : __ / __ / __	Daily Tutorial Sheet-2	Expected Duration : 45 Min
Actual Date of Attempt : __ / __ / __	JEE Main (Archive)	Exact Duration :_____

21. Consider the reaction sequence below : **(2016)**

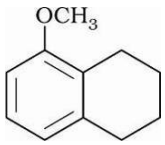




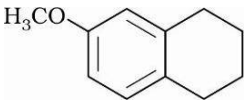
(A)



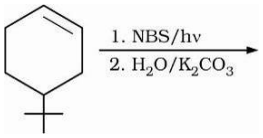
(B)



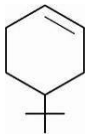
(C)

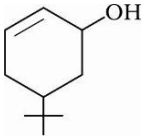


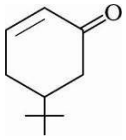
(D)

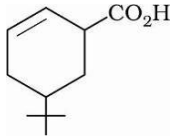
22. The product of the reaction given below is : 

(2016)

(A) 

(B) 

(C) 

(D) 

23. In the following reaction sequence **(2017)**

$$\underset{(C_3H_6Cl_2)}{I} \xrightarrow{KOH(aq.)} II \xrightarrow[(ii)\ H_2O/H^+]{(i)\ CH_3MgBr} III \xrightarrow{Anhy.\ ZnCl_2+Conc.\ HCl} \text{gives turbidity immediately}$$

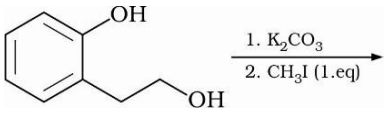
The compound I is :

(A) $CH_2-\underset{Cl}{\underset{|}{CH}}-\underset{Cl}{\underset{|}{CH_3}}$

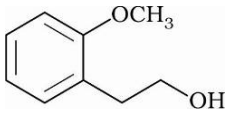
(B) $CH_3-\underset{Cl}{\underset{|}{\overset{Cl}{\overset{|}{C}}}}-CH_3$

(C) $Cl-\underset{Cl}{\underset{|}{CH}}-CH_2-CH_3$

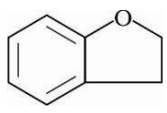
(D) $\underset{Cl}{\underset{|}{CH_2}}-CH_2-\underset{Cl}{\underset{|}{CH_2}}$

24. The major product of the following reaction is : 

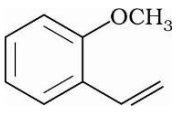
(2017)



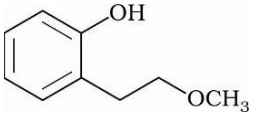
(A)



(B)

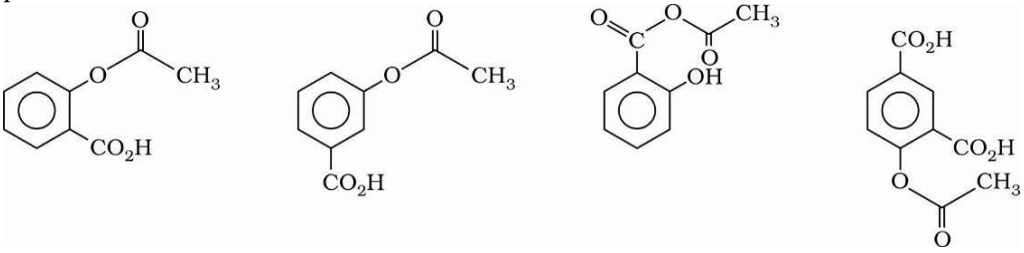


(C)



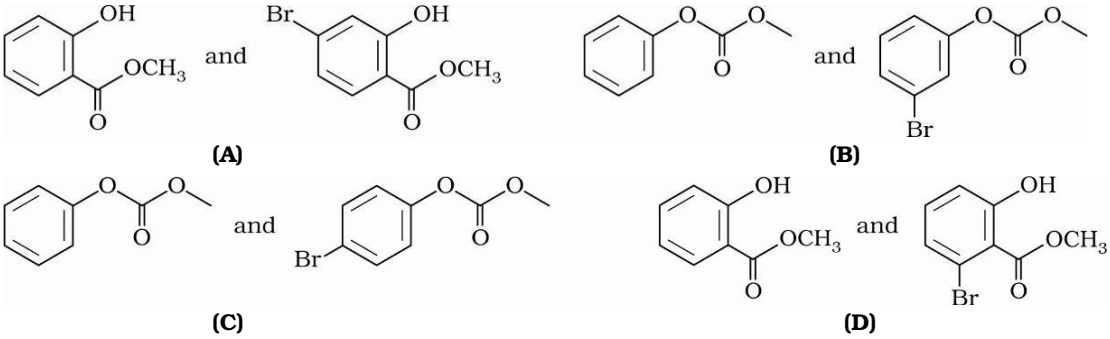
(D)

25. Phenol on treatment with CO_2 in the presence of NaOH followed by acidification produces compound X as the major product. X on treatment with $(CH_3CO)_2O$ in the presence of catalytic amount of H_2SO_4 produce : **(2018)**

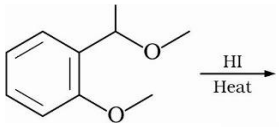


(A) **(B)** **(C)** **(D)**

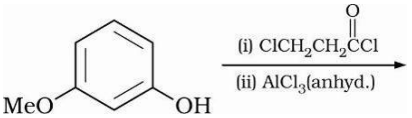
26. Phenol reacts with methyl chloroformate in the presence of NaOH to form product A. A reacts with Br_2 to form product B. A and B are respectively : **(2018)**

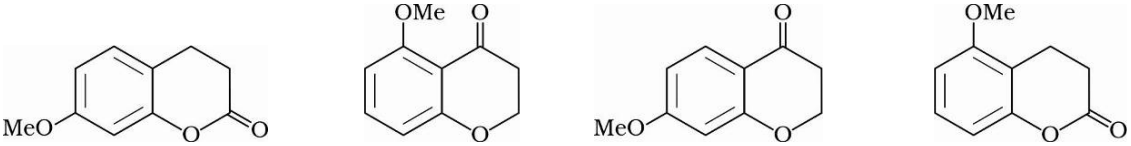


(A) **(B)** **(C)** **(D)**

27. The major product formed in the following reaction is :  **(2018)**

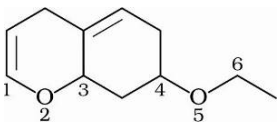
(A) **(B)** **(C)** **(D)**

28. The major product of the following reaction is :  **(2018)**



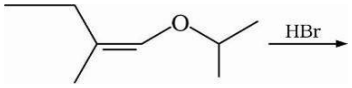
(A) **(B)** **(C)** **(D)**

29. On treatment of the following compound with a strong acid, the most susceptible site for bond cleavage is: **(2018)**



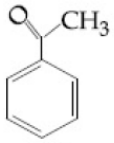
(A) C4 – O5 **(B)** O2 – C3 **(C)** O5 – C6 **(D)** C1 – O2

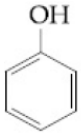
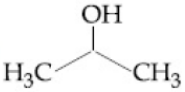
30. The total number of optically active compounds formed in the following reaction is : **(2018)**

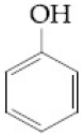
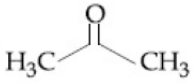


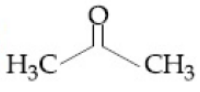
(A) four **(B)** two **(C)** six **(D)** zero

31. The products formed in the reaction of cumene with O_2 followed by reactant with dil. HCl are : **(2019)**

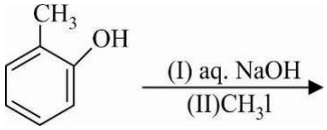
(A)  and CH_3-OH

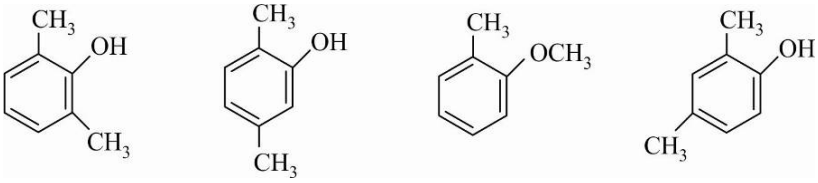
(B)  and 

(C)  and 

(D)  and 

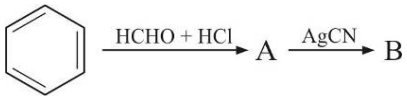
32. The major product of the following reaction is : **(2019)**





(A) **(B)** **(C)** **(D)**

33. The compounds A and B in the following reaction are, respectively : **(2019)**



(1) A = Benzyl chloride, B = Benzyl isocyanide **(2)** A = Benzyl chloride, B = Benzyl cyanide

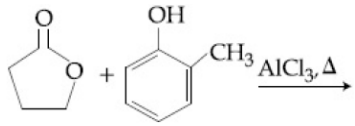
(3) A = Benzyl alcohol, B = Benzyl isocyanide **(4)** A = Benzyl alcohol, B = Benzyl cyanide

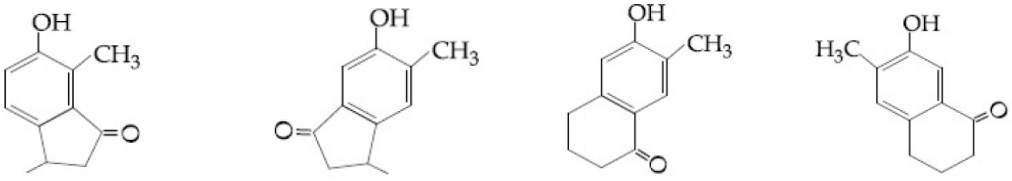
34. The major product of following reaction is : **(2019)**

$$R-C\equiv N \xrightarrow[(2)\ H_2O]{(1)\ AlH(i\text{-}Bu)_2} ?$$

(A) RCOOH **(B)** $RCONH_2$ **(C)** RCHO **(D)** RCH_2NH_2

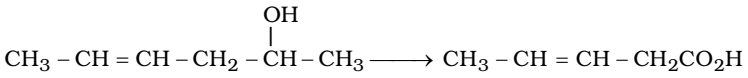
35. The major product of the following reaction is : **(2019)**





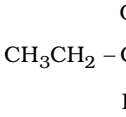
(A) **(B)** **(C)** **(D)**

36. Which is the most suitable reagent for the following transformation ? **(2019)**



(A) alkaline $KMnO_4$ **(B)** CrO_2Cl_2 / CS_2

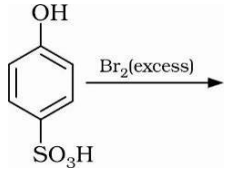
(C) $I_2 / NaOH$ **(D)** Tollen's reagent

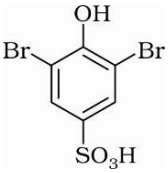
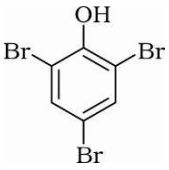
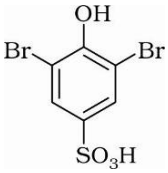
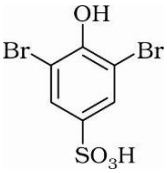
37.  cannot be prepared by : **(2019)**

(A) $HCHO + PhCH(CH_3)CH_2MgX$ **(B)** $CH_3CH_2COCH_3 + PhMgX$

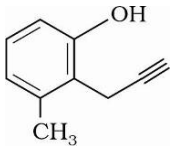
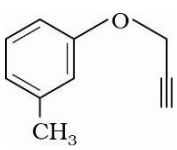
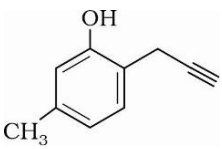
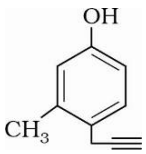
(C) $PhCOCH_2CH_3 + CH_3MgX$ **(D)** $PhCOCH_3 + CH_3CH_2MgX$

38. The major product of the following reaction is : **(2019)**

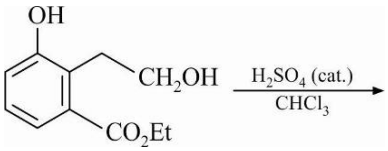


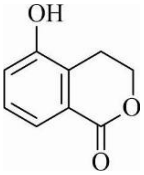
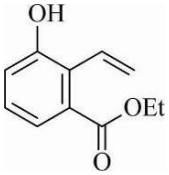
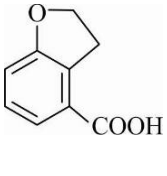
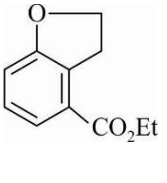
(A)  **(B)**  **(C)**  **(D)** 

39. What will be the major product when m-cresol is reacted with propargyl bromide ($HC \equiv C - CH_2Br$) in presence of K_2CO_3 in acetone? **(2019)**

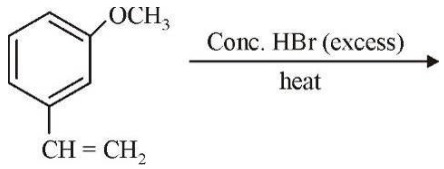
(A)  **(B)**  **(C)**  **(D)** 

40. The major product of the following reaction is: **(2019)**



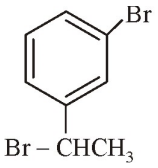
(A)  **(B)**  **(C)**  **(D)** 

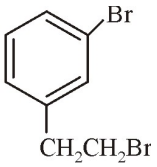
41. The major product of the following reaction is : **(2019)**



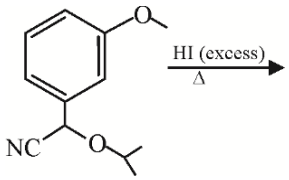
(A) 

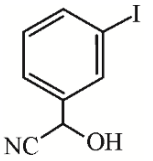
(B) 

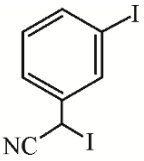
(C) 

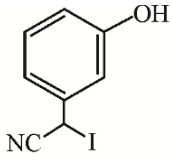
(D) 

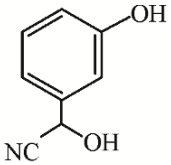
42. The major product of the following reaction is : **(2019)**



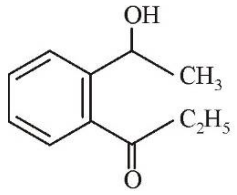
(A) 

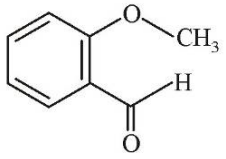
(B) 

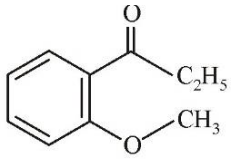
(C) 

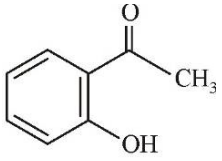
(D) 

43. An organic compound neither reacts with neutral ferric chloride solution nor with Fehling solution. It however, reacts with Grignard reagent and gives positive iodoform test. The compound is : **(2019)**

(A) 

(B) 

(C) 

(D) 

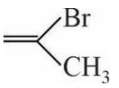
44. Arrange the following compounds in increasing order of C – OH bond length : **(2020)**

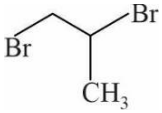
methanol, phenol, p-ethoxyphenol

(A) methanol < p-ethoxyphenol < phenol **(B)** phenol < p-ethoxyphenol < methanol

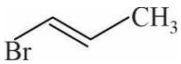
(C) phenol < methanol < p-ethoxyphenol **(D)** methanol < phenol < p-ethoxyphenol

45. 1-methyl ethylene oxide when treated with an excess of HBr produces: **(2020)**

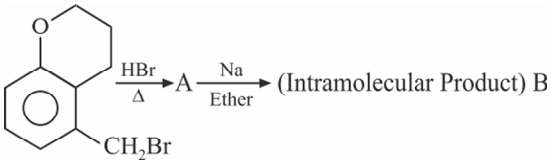
(A) 

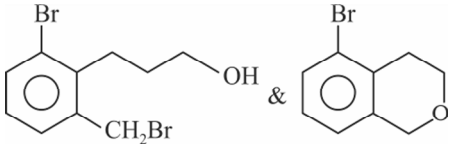
(B) 

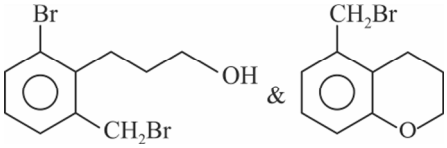
(C) 

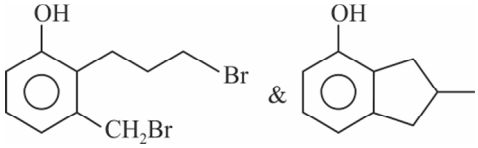
(D) 

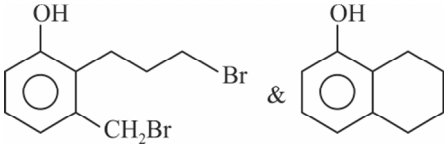
46. In the following reaction sequence, structures of A and B, respectively will be: **(2020)**



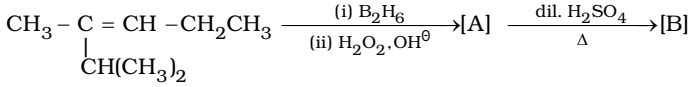
(A) 

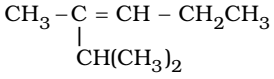
(B) 

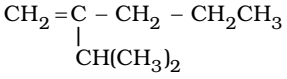
(C) 

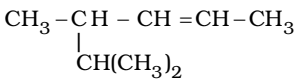
(D) 

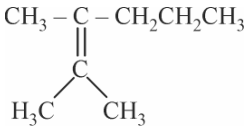
47. The major product [B] in the following sequence of reactions is: **(2020)**



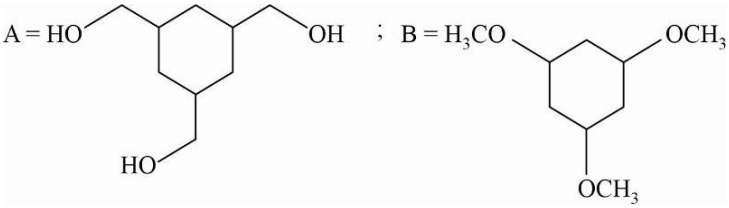
(A) 

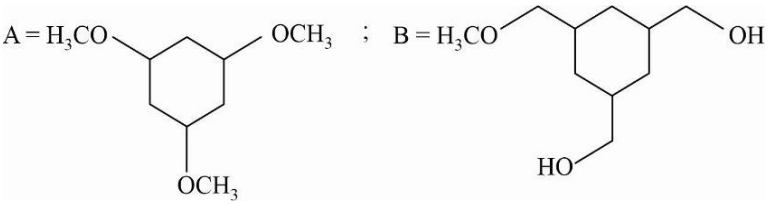
(B) 

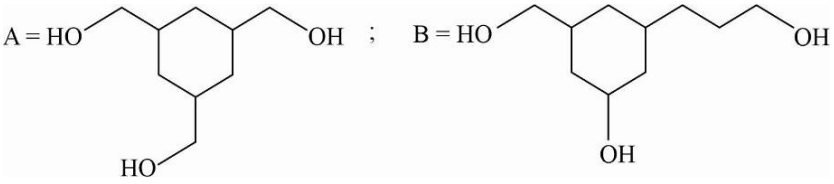
(C) 

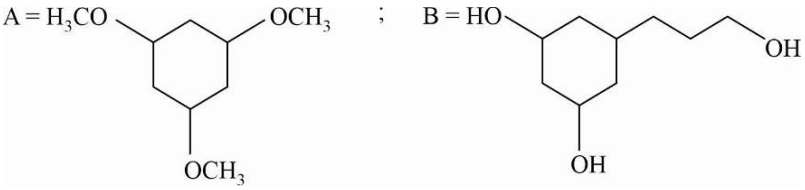
(D) 

48. Among the compounds A and B with molecular formula $C_9H_{18}O_3$. A is having higher boiling point than B. The possible structures of A and B are : **(2020)**

(A) 

(B) 

(C) 

(D) 

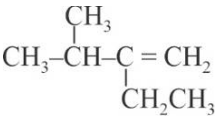
49. Consider the following reactions **(2020)**

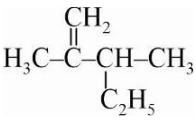
$$A \xrightarrow[(ii)\ H_3O^+]{(i)\ CH_3MgBr} B \xrightarrow[573K]{Cu} 2-\text{methyl}-2-\text{butene}$$

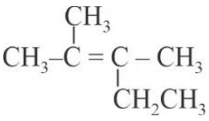
The mass percentage of carbon in A is _____ .

50. The major product (Y) in the following reactions is: **(2020)**

$$CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-C\equiv CH \xrightarrow[H_2O]{HgSO_4,H_2SO_4} X \xrightarrow[Conc.H_2SO_4/\Delta]{(i)C_2H_5MgBr,H_2O} Y$$

(A) 

(B) 

(C) 

(D)