

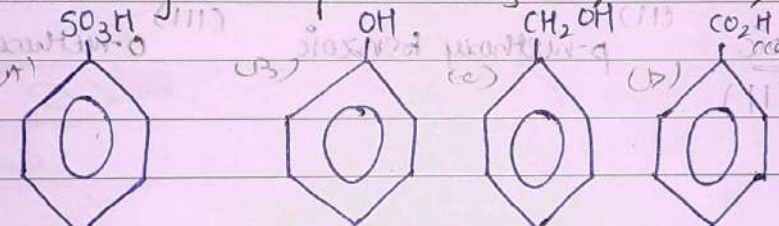
DPP

eg: Q:1 which is stronger : HF ; HCl ; HBr ; HI
 → HI > HBr > HCl > HF (larger nucleus) (less hold on H⁺ ion).

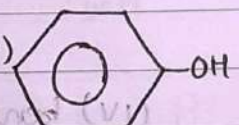
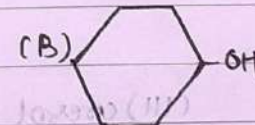
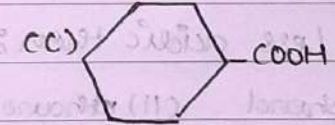
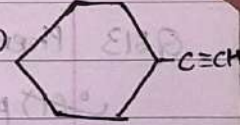
Q:2 lowest pKa in followings: CH₃-CH₂-COOH ; CH≡C-COOH ;
 → (CH₃-CH₂-CH₂-COOH ; CH₂=CH-COOH)

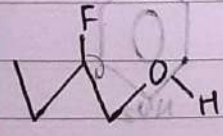
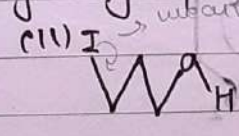
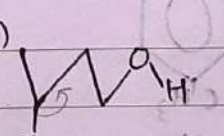
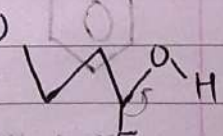
Q:3 Strongest acid: CF₃COOH ; CCl₃COOH ; CBr₃COOH ; CH₃COOH
 → -I eff of F is the most

Q:4 A.S: (A) CH₂-CH₂-COOH (B) CH₃-C(Cl)-COOH (C) CH₂-CH₂-COOH
 → (B) > (A) > (C)
 -I of NO₂ > Cl.

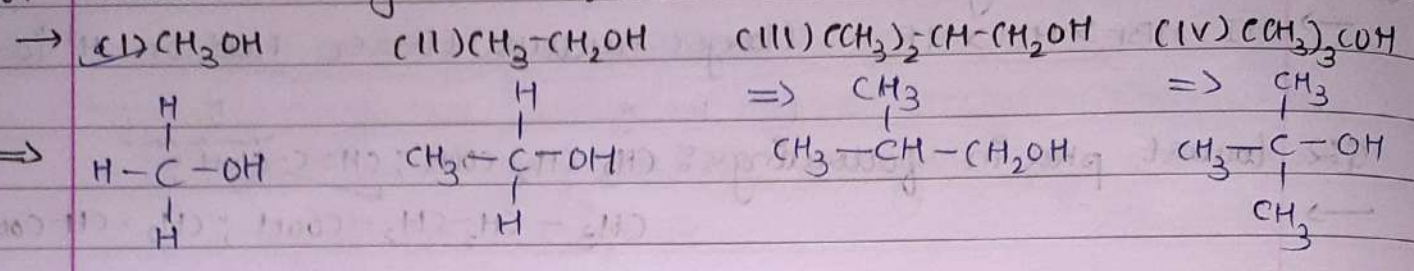
Q:5 Decreasing acidity: (A) PhSO₃H ; (B) PhOH ; (C) PhCH₂OH ; (D) PhCO₂H.
 →  (A) > (D) > (B) > (C)

Q:6 Order of Acidic strength: Phenol ; Water ; Ethyl alcohol.
 → Phenol > Water > Ethyl alcohol.

Q:7 (A)  (B)  (C)  (D) 
 → (C) > (D) > (A) > (B)

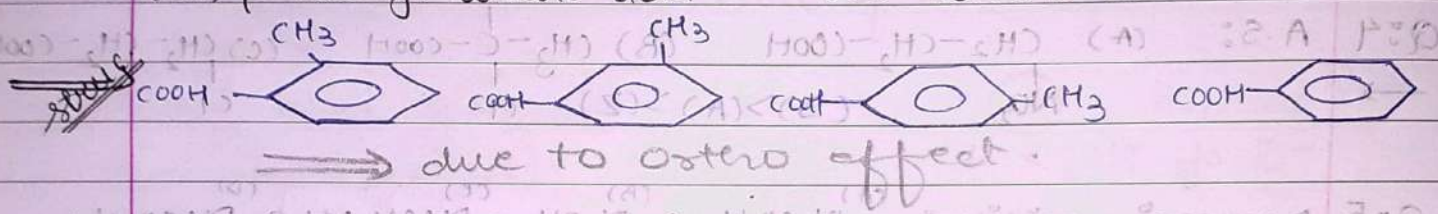
Q:8 most acidic hydroxylic proton:
 (I)  (II)  (III)  (IV) 
 → due to -I effect being the most.

Q:9 which is strongest acid?

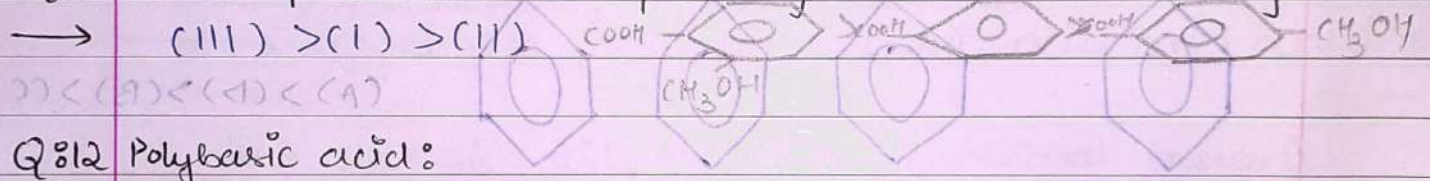


Q:10 which one is more acidic?

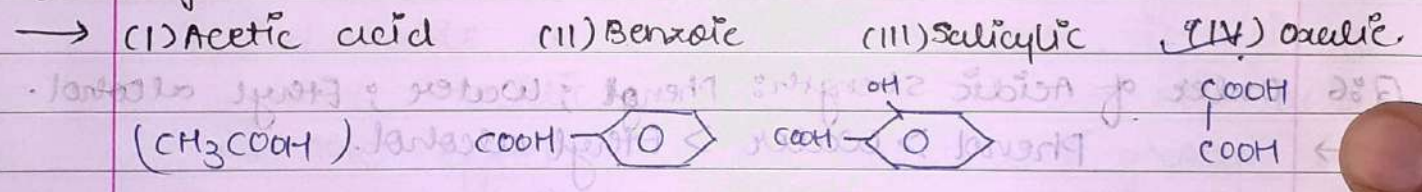
→ (I) o-methyl benzoic acid (II) m-methyl benzoic acid
(III) p-methyl benzoic acid (IV) benzoic acid.



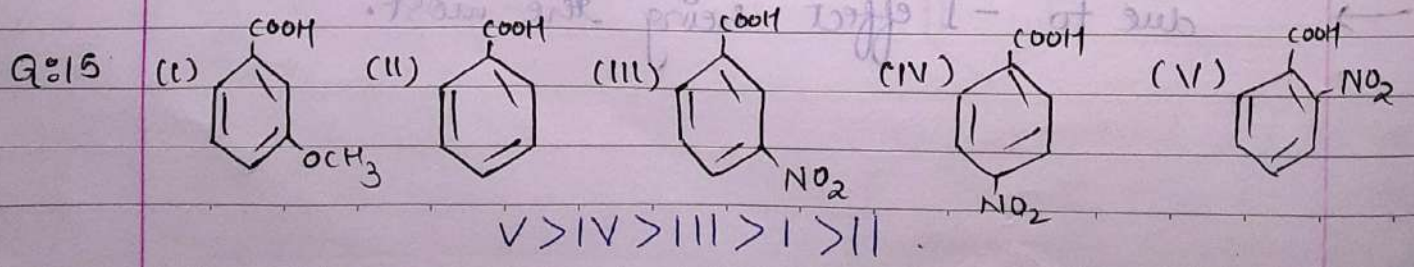
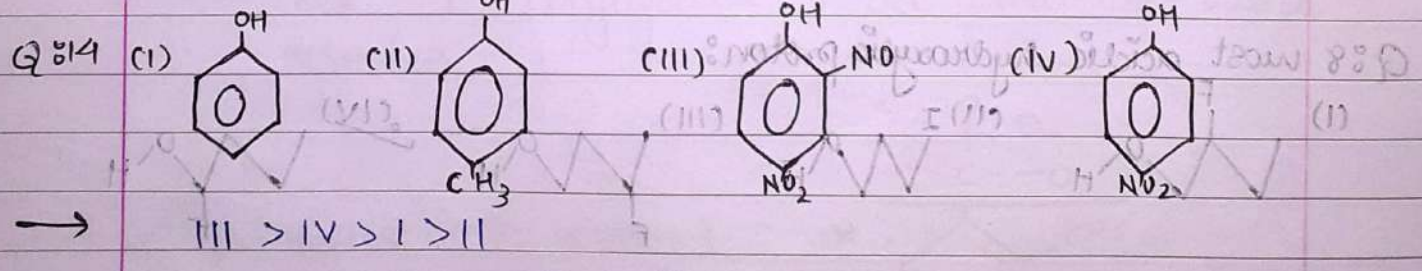
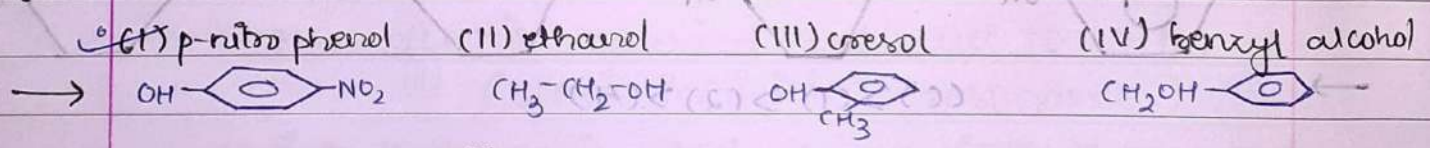
Q:11 Acidity: (I) Benzoic, (II) p-methoxy benzoic, (III) o-methoxy benzoic.



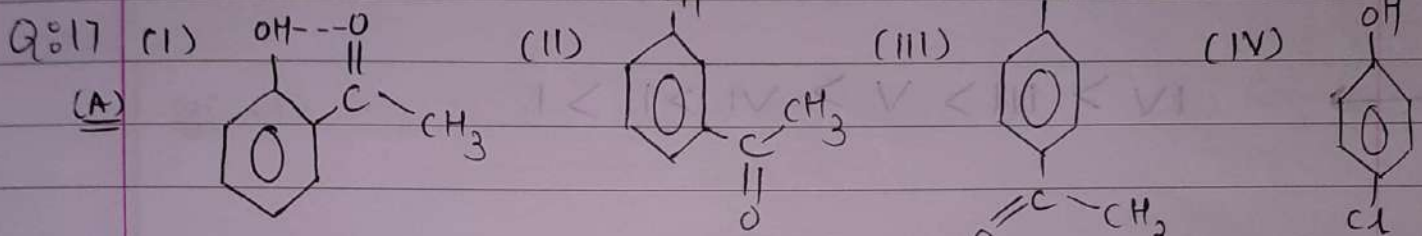
Q:12 Polybasic acid:



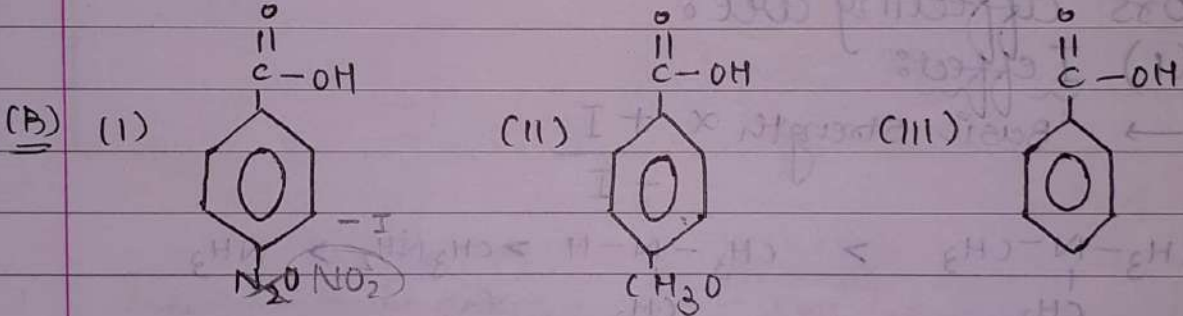
Q:13 Phenol is less acidic than:



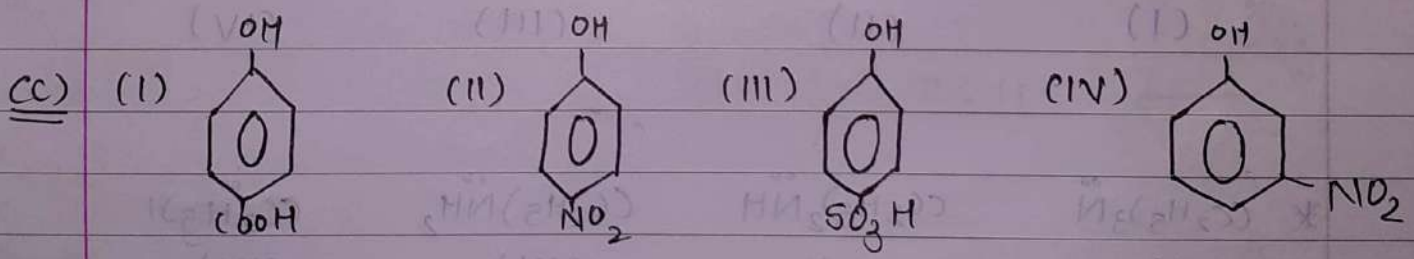
Q:16 (I) oxalic (II) succinic (III) malonic (IV) Adipic
 → I > III > II > IV



→ (III) < (I) < (II) < (IV)

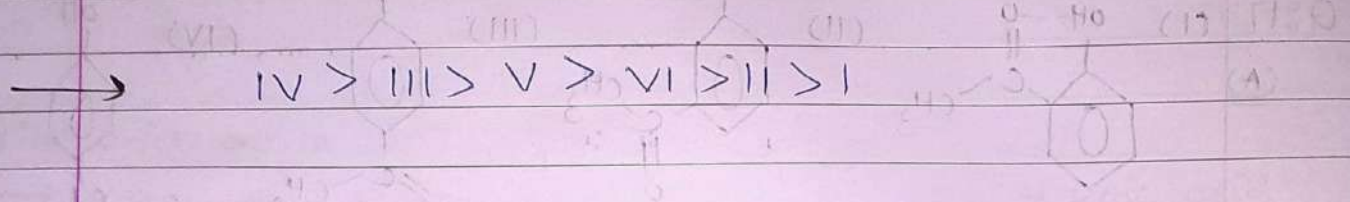
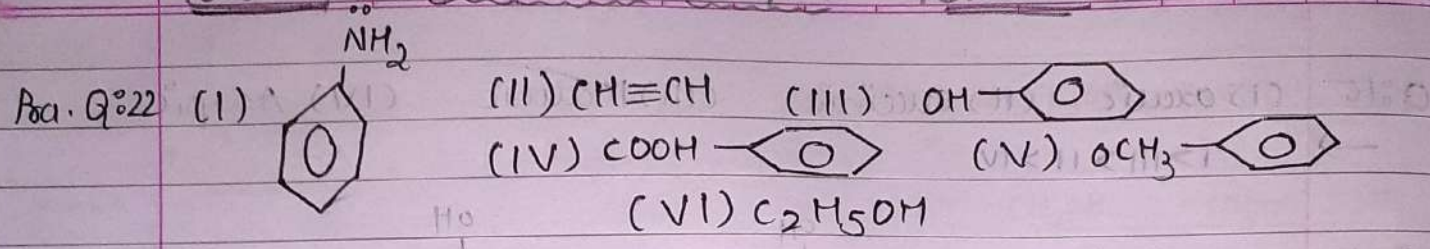


→ I > III > II



→ III > I > II > IV

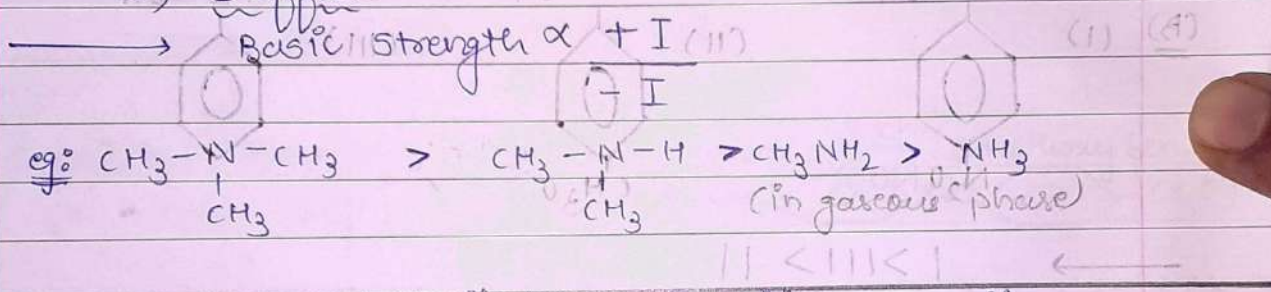
Tuesday CLASSWORK BEGIN. 13/02/24



* Basic Strengths

Factors affecting are:

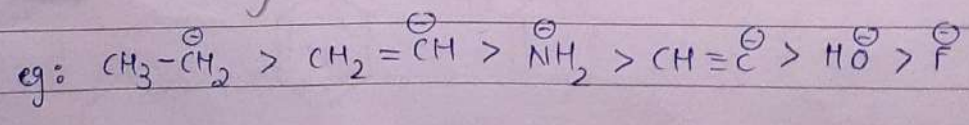
(i) Inductive effect:



213	* <chem>CN(C)C</chem> (I)	<chem>CN(C)N</chem> (II)	<chem>CN(C)N</chem> (III)	<chem>N</chem> (IV) (in aq. sol ⁿ)
	→ (VI) II > III > I (IV) \propto arginine > lysine > alanine			
231	* <chem>CN(C)C</chem> (I)	<chem>CN(C)N</chem> (II)	<chem>CN(C)N</chem> (III)	<chem>N</chem> (IV) (in aq. sol ⁿ)
	→ II > I > III > IV. VI < arginine > lysine > alanine			

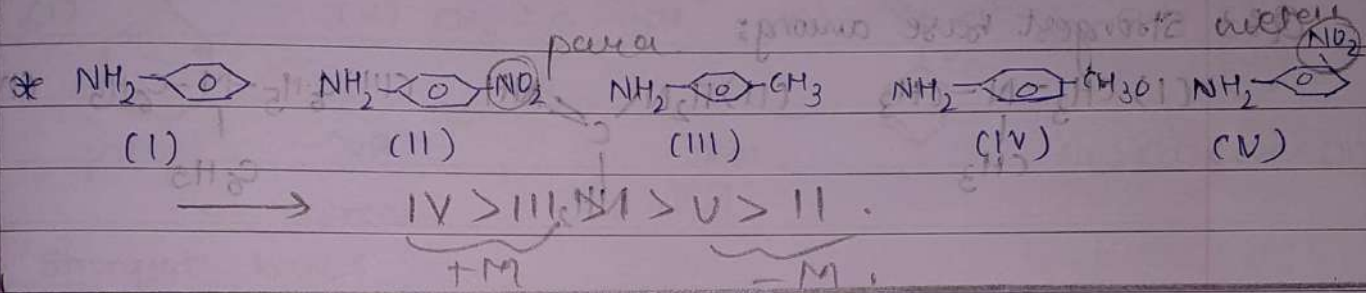
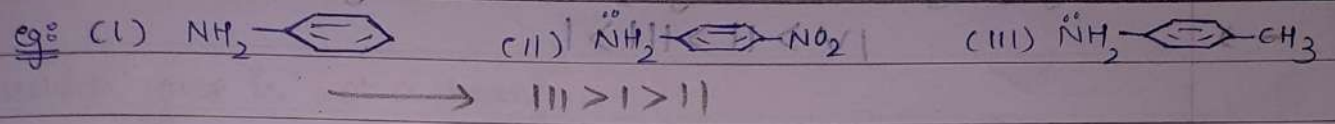
(ii) Value for K_b or pK_b :
 Basic strength \propto $\frac{K_b}{pK_b}$

(iii) lone pair donation
 easy donation \Rightarrow more basic.



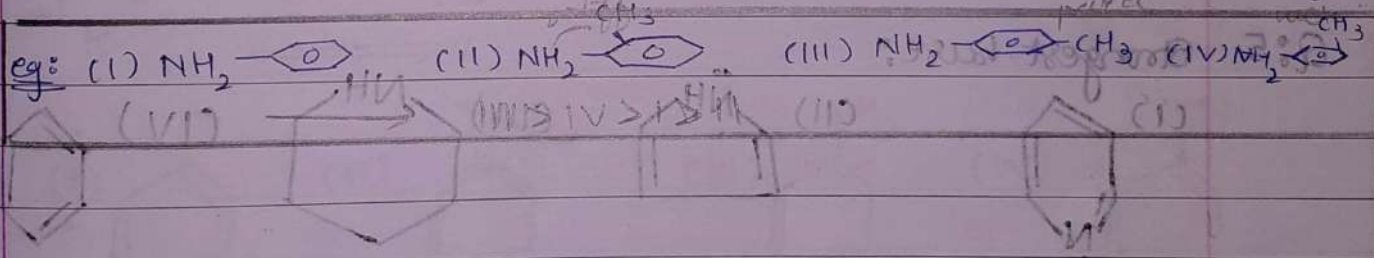
(IV) M effect:

Basic strength $\propto \frac{+M < || < |}{-M}$

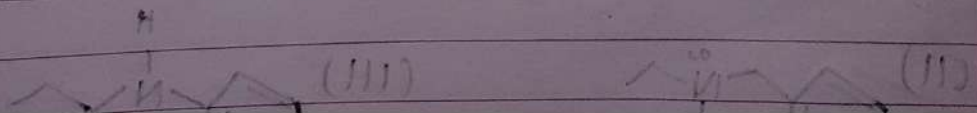
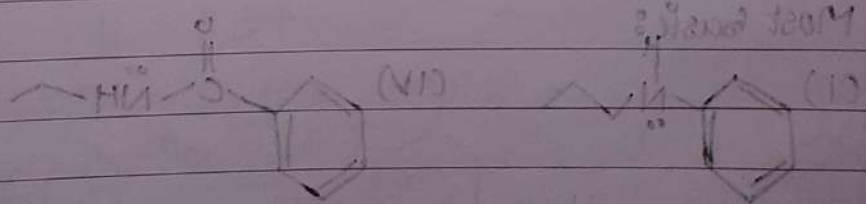
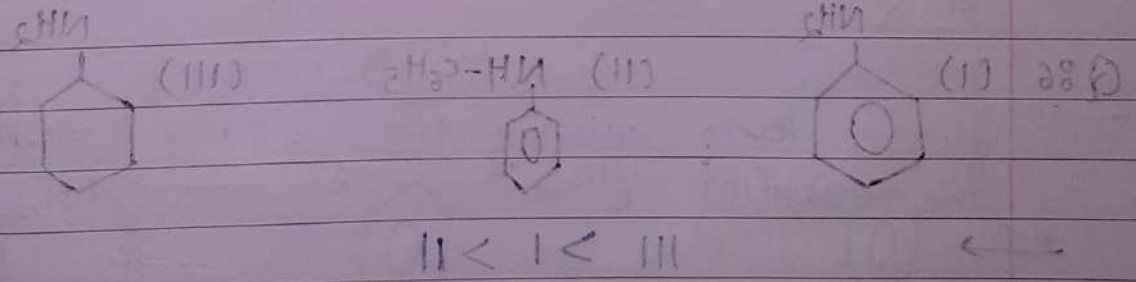


(V) Ortho effect:

in Aniline (it will show low basic strength)



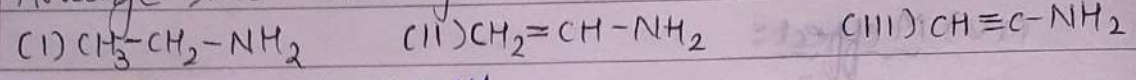
Q23



DPP

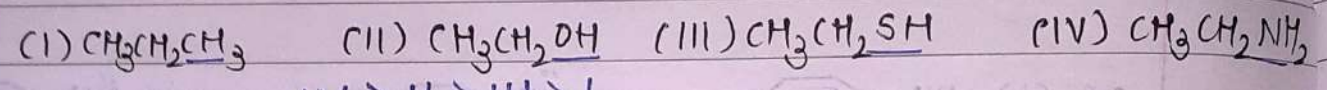
Q:1

Arrange the basicity:



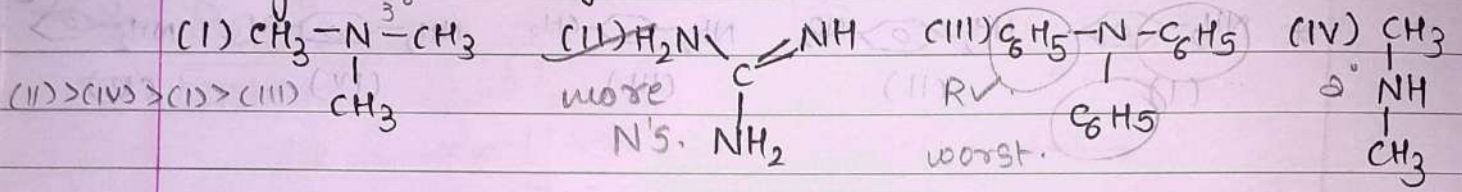
→ I > II > III

Q:2

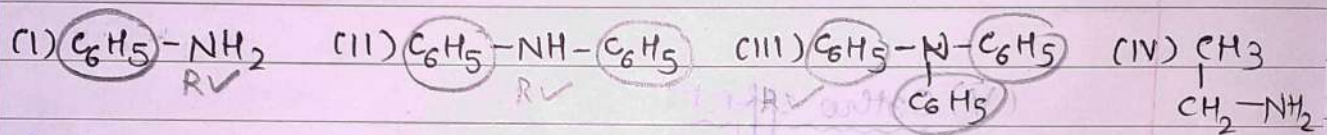


→ IV > II > III > I

Q:3 Strongest base among:

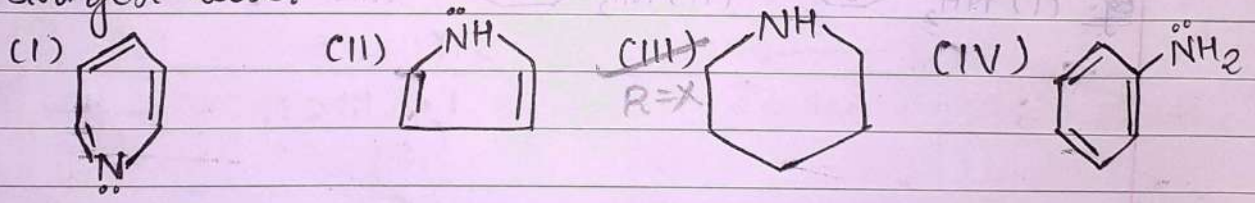


Q:4

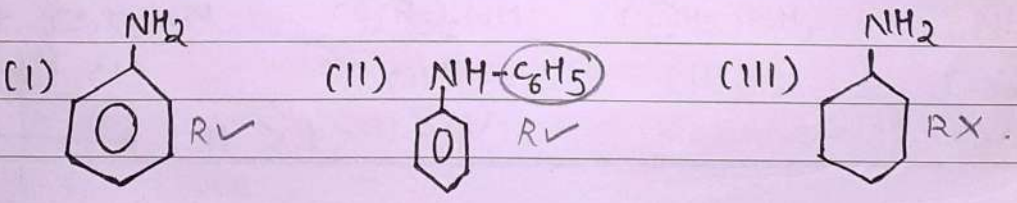


→ (IV) > (I) > (II) > (III)

Q:5 Strongest base:

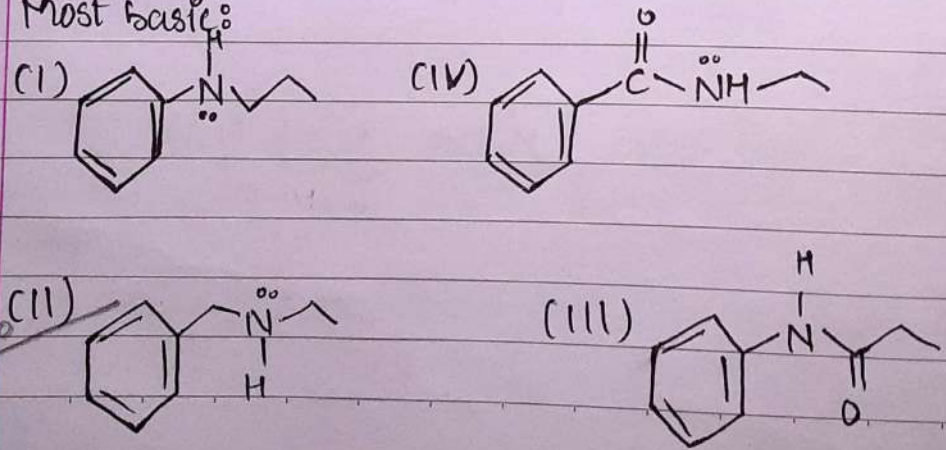


Q:6



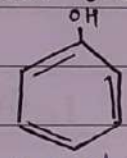
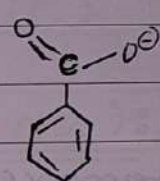
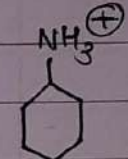
→ III > I > II


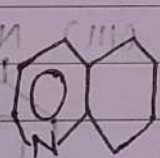
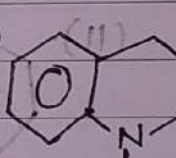
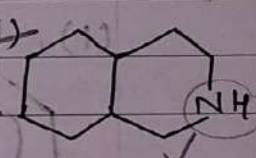
Q:7 Most basic:


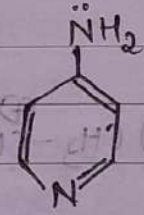
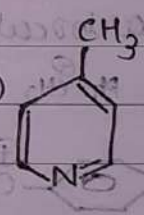
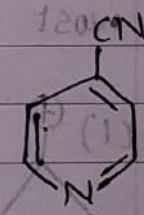


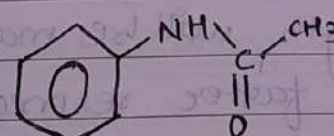
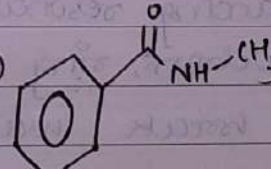
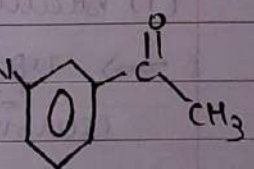
Q:8 (I) $RCOO^-$ (II) RO^- (III) NH_2^- (IV) OH^- Basicity.
 → (III) > (II) > (IV) > (I)


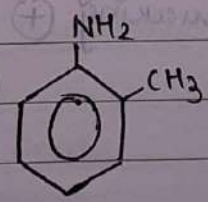
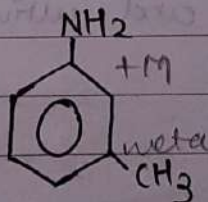
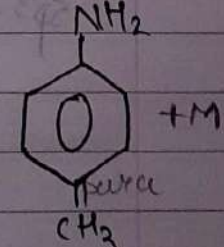
Q:9 (I) $R_4N^+ OH^-$ (II) R_3N^{3-} (III) $R_2NH_2^{2-}$ (IV) RNH_2^{1-}
 → (I) > (III) > (IV) > (II)

Q:10 which one is not a base?
 (I)  phenol.
 (II) $CH_3-C(=O)-NH_2$
 (III) 
 (IV) 

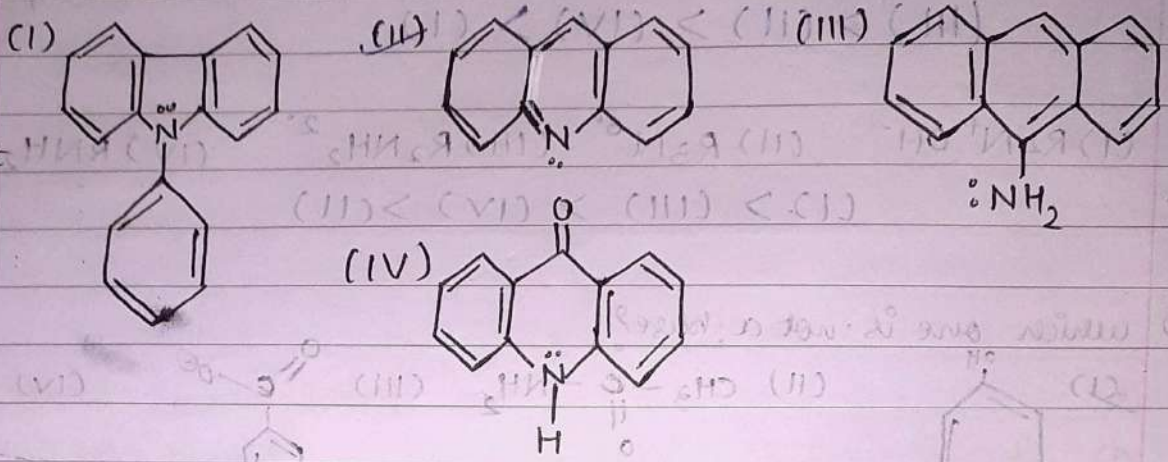
Q:11 Strongest base:
 (I) 
 (II) 
 (III) 
 (IV) 
 → R ✓ +I ✓ +I ✓ LP u no dis. eff. of R & I

Q:12 (I)  (II)  (III)  (IV) 
 → II > III > I > IV

Q:13 (I)  (II)  (III) 
 → III > II > I

Q:14 (I)  (II)  (III)  (IV) 
 → IV > III > I > II

Q:15

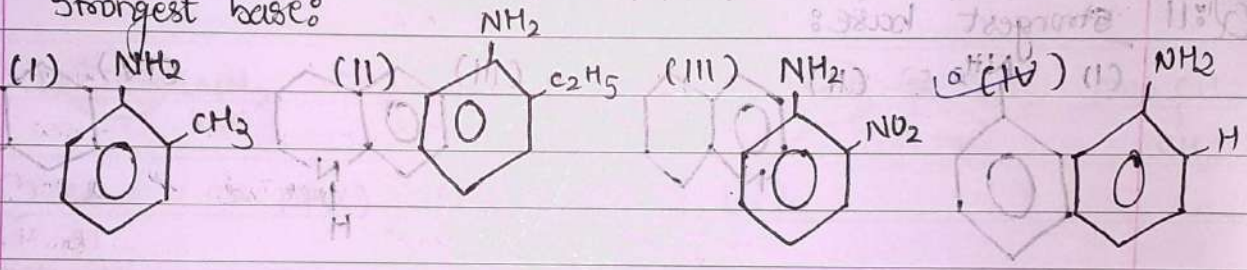


Strongest base:

→ (I) triple resonance $II > III > IV > I$

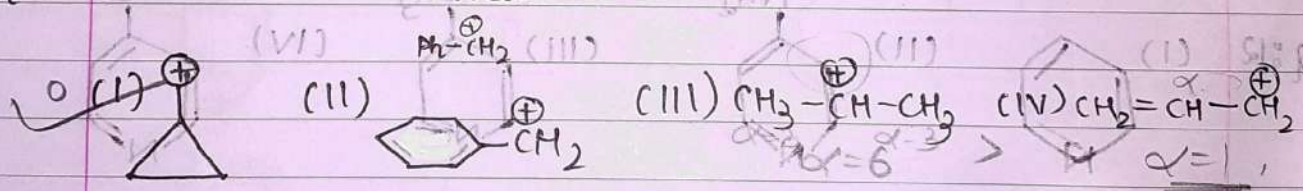
Q:16

Strongest base:



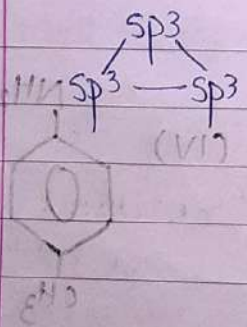
(PPP: 6 Q:15)

Q:17 most stable carbocation.

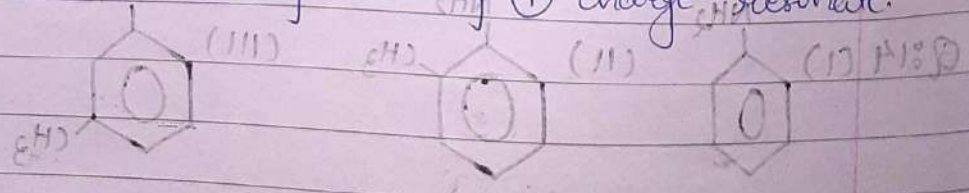


→ (I) because of dancing resonance (most stable).

→ upto 4 carbons, ring strength will be maximum causing ring break making faster resonating compound



more repulsion of degree causing rotation and ultimately making \oplus charge resonate.



$II < I < III < VI$