NUCLEUS EDUCATION
Centre of Excellence

unacademy

IIT - ORGANIC CHEMISTRY

NURTURE

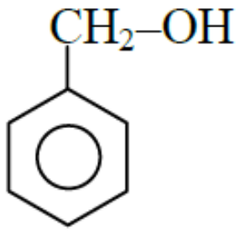
Corporate Office: NAIVEDHYAM, Plot No. SP-11, Old INOX, Indra Vihar,
Kota (Raj.) 324005

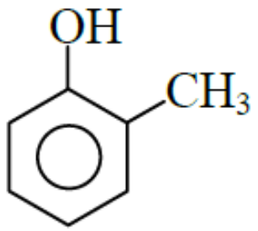
DPP # 06 Time : 30 Min.

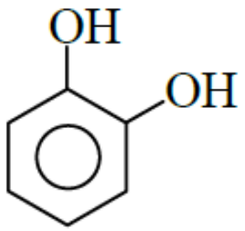
1. Match the column

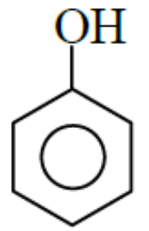
	Column-I		**Column-II**
(A)	Carbocation $\overset{\oplus}{C}H_3$	(P)	Para magnetic
(B)	Carbanion $\overset{\ominus}{C}H_3$	(Q)	Diamagnetic
(C)	Carbon free radical $\dot{C}H_3$	(R)	Electron deficient central atom
(D)	Ammonia $\ddot{N}H_3$	(S)	sp^2 hybridisation
		(T)	sp^3 hybridisation

2. Homologue of phenol is :

(A) 

(B) 

(C) 

(D) 

3. Which of the following is the correct order of -I effect.

(A) $-NO_2 > -CN > -COOH$

(B) $-F > Cl > -Br > -I$

(C) $-\overset{\oplus}{N}H_3 > -\overset{\oplus}{N}H_3Me > -\overset{\oplus}{N}H_3Me_3$

(D) $-C\equiv CH > -Ph > -CH=CH_2$

4. What is the correct order of +I effect of the following groups.

$-O^-$	$-CO_2$	$-CR_3$	R_2CH	$-D$	$-T$	$-H$
a	b	c	d	e	f	g

(A) a > b > c > d > f > e > g

(B) a > c > d > b > e > f > g

(C) a > c > b > d > f > e > g

(D) a > f > b > d > e > c > g

5. Which is/are first member of given homologous series ?

(A) Alkadiene $\Rightarrow CH_2=C=CH_2$

(B) Alkenyne $\Rightarrow HC\equiv C-CH=CH_2$

(C) Cynide $\Rightarrow CH_3CH_2CN$

(D) Ketone $\Rightarrow CH_3-\overset{\overset{O}{\|}}{C}-CH_3$

6. How many of the following are –I effect (negative inductive effect) showing groups.

(a) $-NO_2$ (b) $-CO_2H$ (c) $-CH_3$ (d) $-\overset{\oplus}{N}H_3$ (e) $-O^-$

(f) –CN (g) $-CMe_3$ (h) –Cl (i) –H

7. How many groups can show –I effect ?

$-CCl_3$, $-NO_2$, –OH, , $-N(CH_3)_2$, $-SO_3H$, $-O^{\ominus}$, –CHO, –Cl, $-COO^{\ominus}$

8. The number of groups showing +1 effect = X.

The number of groups showing –I effect = Y.

Find value XY e.g. if X = 3. Y = 4. Answer is 034

Groups are given as follows :

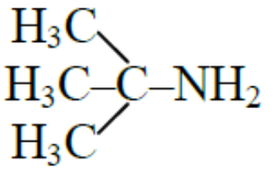
(a) –Cl (b) $-\bar{N}H$ (c) $-\underset{\underset{O}{\|}}{C}-OH$ (d) $-N<$ (e) $-CH<$

(f) $-\underset{\underset{O}{\|}}{C}-O^-$ (g) $-CCl_3$ (h) $-\overset{\oplus}{P}H_3$ (i) –OH

9. Which of the following is more acidic than H_2O :

(A) HF (B) NH_3 (C) $CH \equiv CH$ (D) $CH_2=CH_2$

10. Which of the following is more basic than NH3 in gaseous phase :

(i) CH_3NH_2 (ii) $CH_3–CH(NH_2)–$ (iii)  (iv) All of above