DPP No: 02

Maximum Time 50 Min

Chemistry

TARGET JEE-MAINS

SYLLABUS : GOC

1. Rank the following radicals in order of Decreasing stability

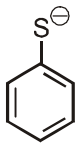
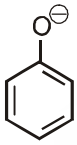
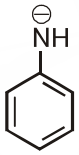
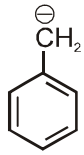
I II III IV

(A) III > II > I > IV (B) III > II < I < IV (C) II > III > II > IV (D) III < II < I < IV

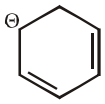
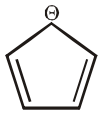
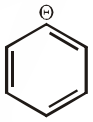
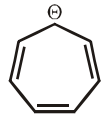
2. Which of the following is the least stable carbanion ?

(A) $HC \equiv \bar{C}$ (B) $(C_6H_5)_3\bar{C}$ (C) $(CH_3)_3\bar{C}$ (D) $\bar{C}H_3$

3. The most stable anion is :

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

4. The most stable anion is :

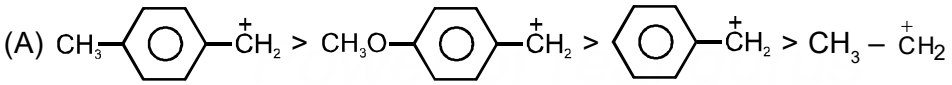
(A)  (B)  (C)  (D) 

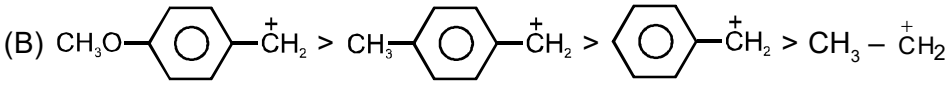
5. Which of the following is the correct order of stability of free radicals?

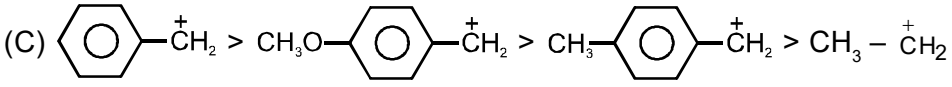
(A) benzyl > allyl > 2º > 1º (B) allyl > benzyl > 2º > 1º

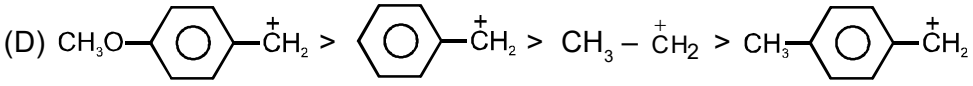
(C) allyl > 2º > 1º >benzyl (D) benzyl > 2º > 1º > allyl

6. Which of the following shows the correct order of decreasing stability ?

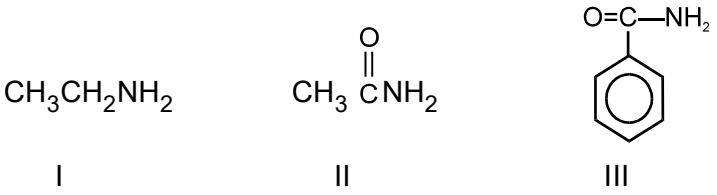
(A) 

(B) 

(C) 

(D) 

7. Consider the following

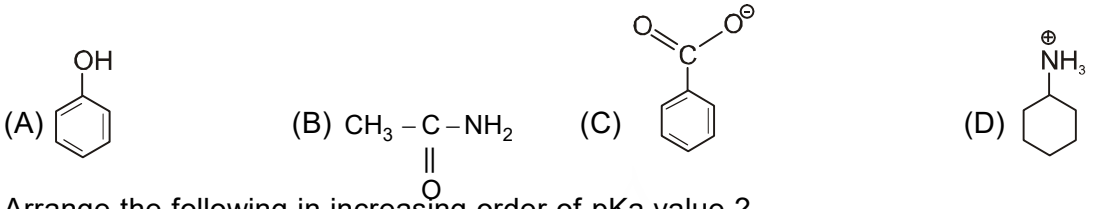


I II III

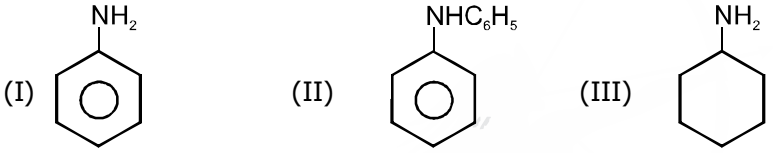
Correct order of their basic strength is

(A) I < II < III (B) II > I > III (C) III > II < I (D) II < III < I

8. Which of the following cannot be a base ?

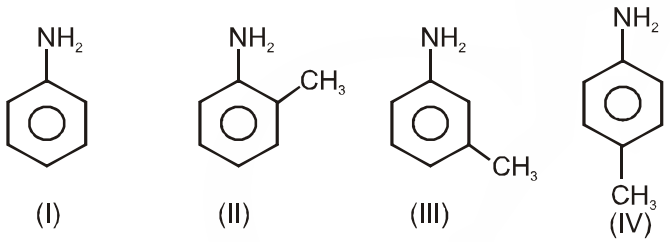


9. Arrange the following in increasing order of pKa value ?



(A) II < I < III (B) III < I < II (C) III < II < I (D) II < III < I

10. Select the basic strength order of following molecule :



(I) (II) (III) (IV)

(A) II > III > IV > I (B) II > IV > III > I (C) IV > II > III > I (D) IV > III > I > II

11. Which of the following acid has the smallest dissociation constant ?

(A) $CH_3-\underset{\displaystyle NO_2}{\underset{|}{CH}}-COOH$ (B) $O_2N-CH_2-CH_2-COOH$

(C) $Cl-CH_2-CH_2-COOH$ (D) $NC-CH_2-CH_2-COOH$

12. Which of the following option shows the correct order of decreasing acidity :

(A) $PhCO_2H > PhSO_3H > PhCH_2OH > PhOH$

(B) $PhSO_3H > PhOH > PhCH_2OH > PhCO_2H$

(C) $PhCO_2H > PhOH > PhCH_2OH > PhSO_3H$

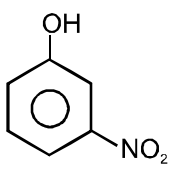
(D) $PhSO_3H > PhCO_2H > PhOH > PhCH_2OH$

13. Arrange increasing order of acidic strength of following dibasic acids :

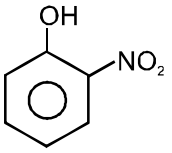
(I) oxalic acid, (II) succinic acid, (III) malonic acid, (IV) adipic acid

(A) III < II < I < IV (B) II < III > I > IV (C) I > III > II > IV (D) II > I > III < IV

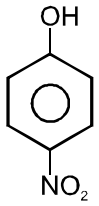
14.



I



II

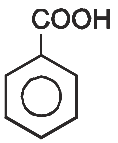


III

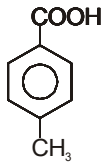
Arrange above phenol in increasing order of pK_a value :

(A) I < II < III (B) III < I < II (C) III < II < I (D) I < III < II

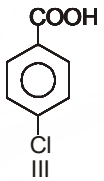
15. Arrange the following compounds in increasing order of their acidic strength.



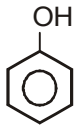
I



II



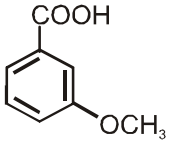
III

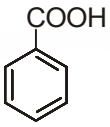


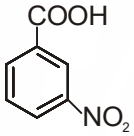
IV

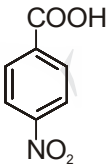
(A) IV < II < I < III (B) I < II < III < IV (C) IV < II < III < I (D) I < III < II < IV

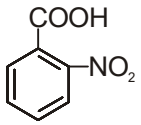
16. Find the order of K_a of following compounds :

(I) 

(II) 

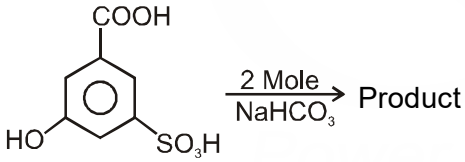
(III) 

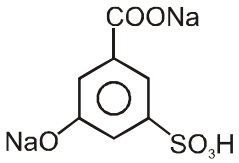
(IV) 

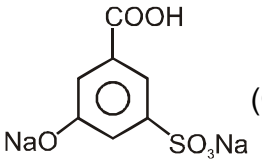
(V) 

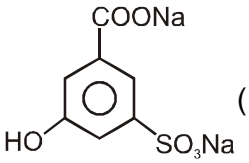
(A) I < II < III < IV < V (B) IV < I < III < II < V (C) III < II < I < IV < V (D) II < I < III < IV < V

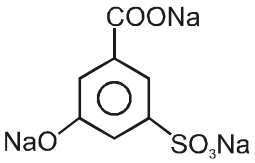
17.



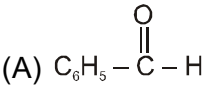
(A) 

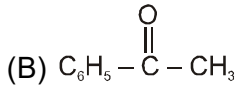
(B) 

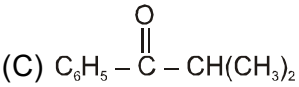
(C) 

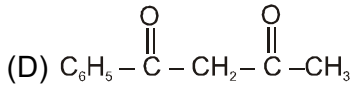
(D) 

18. Keto-enol tautomerism does not observe in :

(A) 

(B) 

(C) 

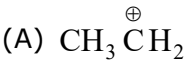
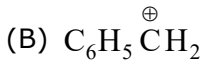
(D) 

19. The enolic form of acetone contains :

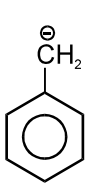
(A) 9 σ bonds, 1 π bond and 2 lone pairs (B) 8 σ bond, 2 π bond and 2 lone pairs

(C) 10 σ bond, 1 π bond and 1 lone pair (D) 9 σ bond, 2 π bond and 1 lone pair

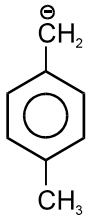
20. The most stable carbonium ion is

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

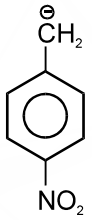
21. Arrange the following carbanions in decreasing order of stability :



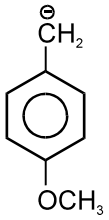
I



II



III



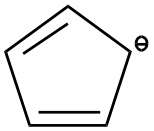
IV

(A) III > I > IV > I (B) III > II > I > IV (C) I > III > II > IV (D) III > I > II > IV

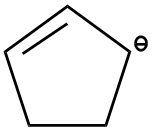
22. The order of stability of the following carbanion is :

(I)

(II)



(III)



(IV)

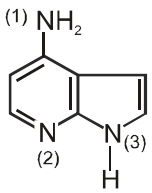
(A) I > II > III > IV (B) I > III > II > IV

(C) IV > III > II > I (D) III > IV > I > II

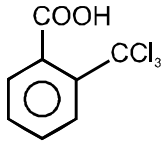
23. The shape of CH_3^+ cation is likely to be:

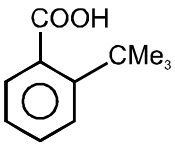
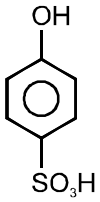
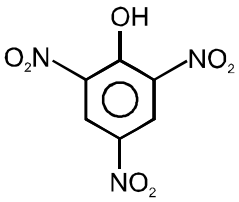
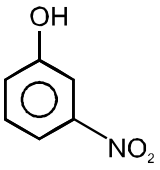
(A) pyramidal (B) tetrahedral (C) linear (D) planar

24. Which of the following group is most basic in the given compounds :



25. How many of the following acids (given below) react with $NaHCO_3$ and liberate $CO_2(g)$?

$CCl_3–COOH$ $CH_3–CH_2–OH$  HCl

ANSWER KEY

1.	**(A)**	**2.**	**(C)**	**3.**	**(A)**	**4.**	**(B)**	**5.**	**(A)**	**6.**	**(B)**	**7.**	**(D)**
8.	**(D)**	**9.**	**(A)**	**10.**	**(D)**	**11.**	**(C)**	**12.**	**(D)**	**13.**	**(C)**	**14.**	**(C)**
15.	**(A)**	**16.**	**(D)**	**17.**	**(C)**	**18.**	**(A)**	**19.**	**(A)**	**20.**	**(C)**	**21.**	**(D)**
22.	**(D)**	**23.**	**(D)**	**24.**	2	**25.**	6						