ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 9

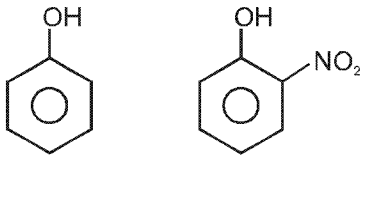
Total Marks : 24

Max. Time : 26 min.

Topic : Acid and Basic Strength

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.6	(3 marks, 3 min.)	[18, 18]
Subjective Questions ('–1' negative marking) Q.7 to Q.8	(4 marks, 5 min.)	[8, 10]

1.



	I	II	III	IV
Pka.	9.98	7.23	8.40	7.15

Mark True and False statements related to the variation in pKa values given for the compounds mentioned above

S_1 : III is more acidic than I due to–I effect of–NO_2 group

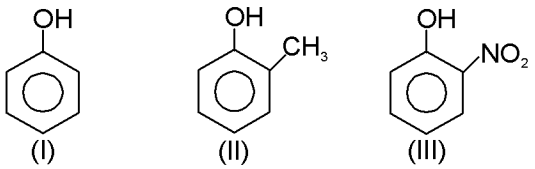
S_2 : Due to H–bonding in II, it is slightly less acidic than IV.

S_3 : Due to presences of –M effect II & IV are more acidic than that of III.

S_4 : Mesomeric effect of –NO_2 group is not operative in casei of III

(A) TTTT (B) TFTF (C) FTFT (D) FFTT

2._ The correct decreasing order of acid strength of following compounds is :



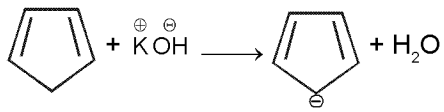
(A) III > II > I (B) I > II > III (C) II > III > I (D) III > I > II

3. Arrange basicity of the given compounds in decreasing order :

(i) $CH_3–CH_2–NH_2$ (ii) $CH_2=CH–NH_2$ (iii) $CH\equiv C–NH_2$

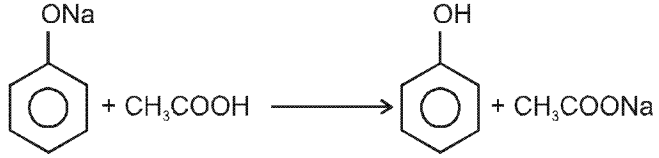
(A) i > ii > iii (B) i > iii > ii (C) iii > ii > i (D) ii > iii > i

4. Which of the following reaction is possible ?

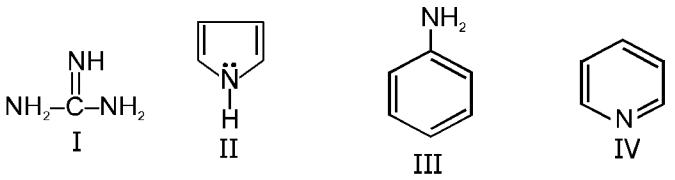
(A) 

(B) $CH_3-\overset{O}{\overset{\|}{C}}-OH + CH_3SO_3Na \longrightarrow CH_3-\overset{O}{\overset{\|}{C}}-ONa + CH_3SO_3H$

(C) $CH_3-\overset{O}{\overset{\|}{C}}-OH + H-\overset{O}{\overset{\|}{C}}-ONa \longrightarrow CH_3-\overset{O}{\overset{\|}{C}}-ONa + H-\overset{O}{\overset{\|}{C}}-OH$

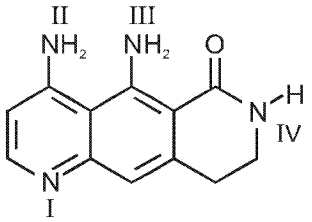
(D) 

5. Write the basicity order of the following compounds?



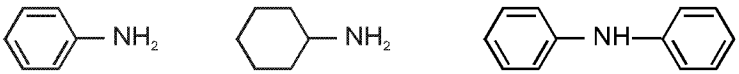
(A) I > III > IV > II (B)I > II > III > IV (C) I > IV > III > II (D) I > III > II > IV

6. Identify the most basic nitrogen atom.

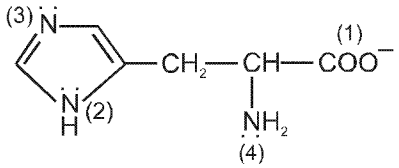


(A) I (B) II (C) III (D) IV

7._ Write the basicity order of the following compounds ?



8. Which of the following group is most basic :



Answer Key

DPP No. # 9

1.	(A)	**2._**	(D)	**3.**	(A)	**4.**	(D)	**5.**	(C)
6.	(A)	**7._**	II > I > III	**8.**	4				

Hints & Solutions

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2. (D) $-NO_2 \rightarrow -M > -I$; $-CH_3 \rightarrow$ H.C. and $+I$
In phenol, No ortho effect.

3. –I effect ↑ Basic strength ↓.