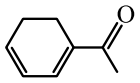
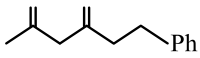
JEE-2024

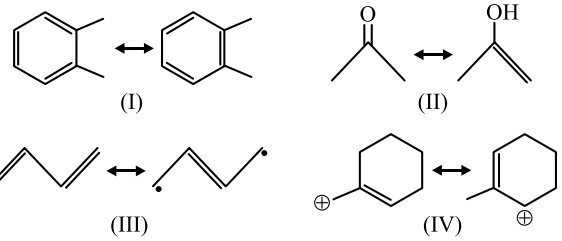
G.O.C

DPP-03

1.

Column-I (Compound/Intermediate)	**Column-II** (Number of sp^2-sp^2 bond)
(1) $CH_2 = C = CH - CH_3$	(P) 7
(2) 	(Q) 5
(3) 	(R) 8
(4) 	(S) 0

2. Which of the following pairs are resonance structures of each other.

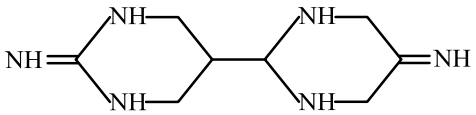


(1) (I) (2) (II)
(3) (III) (4) (IV)

3. Which compound below does not contain any conjugated multiple bonds ?
(1) 1, 2, 4-pentatriene
(2) 1, 3-cyclobutadiene
(3) 1, 5-hexadiene
(4) 3-methyl-2, 4-hexadiene

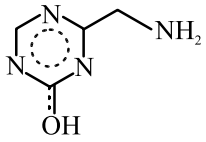
4. The intermediate having unpaired electrons is
(1) CH_3^+ (2) CH_3^-
(3) CH_5^+ (4) $CH_3^\bullet$

5. Number of unshared lone pairs and shared lone pairs are respectively



(1) 2, 4 (2) 3, 3
(3) 4, 2 (4) 5, 1

6. In the given resonance hybrid, how many lone pairs are localized ?



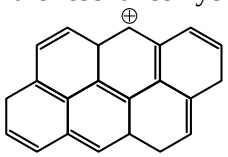
(1) 0 (2) 4
(3) 3 (4) 5

7. Urea $NH_2 - \overset{\overset{O}{\|}}{C} - NH_2$ is obtained during formation of ammonium cyanate by using KCNO and $(NH_4)_2SO_4$: $NH_2CONH_2 \rightleftharpoons NH_4CNO$

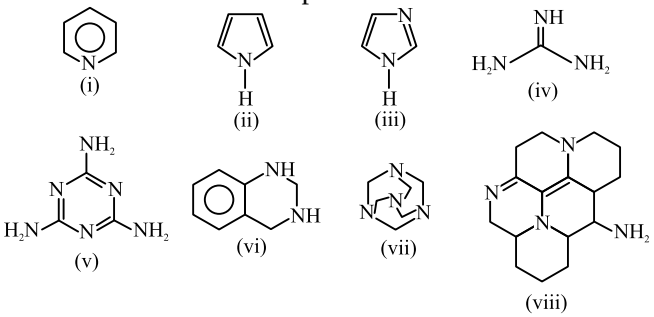
Formation of urea suggests
(1) Organic compound can never be synthesized in laboratory
(2) Phenomenon of isomerism
(3) Organic compound can be synthesized in laboratory
(4) Both (2) and (3)

8. Total number of parallel P_z orbitals in p-chloro-nitrobenzene is :

9. Find the number of carbon atoms where $\oplus$ charge is delocalized in the resonance hybrid.



10. Find the number of compounds having both localised and delocalised lone pair at N-atom.



Answer Key

1. **(1 → S), (2 → P), (3 → Q), (4 → R)**
2. **(1)**
3. **(3)**
4. **(4)**
5. **(3)**
6. **(4)**
7. **(4)**
8. **(10)**
9. **(6)**
10. **(5)**