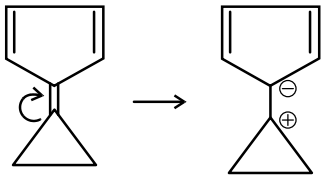
DPP-02

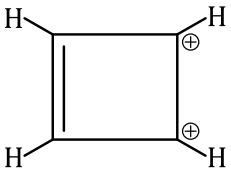
SOLUTION

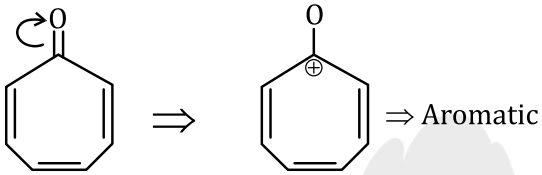
Link to View Video Solution: Click Here

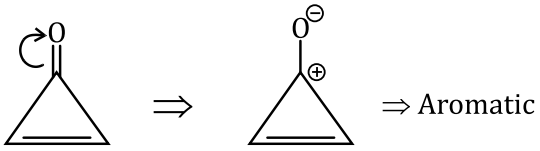
1.

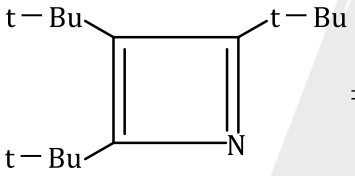
(1)  ⇒ Aromatic

⇒ Aromatic

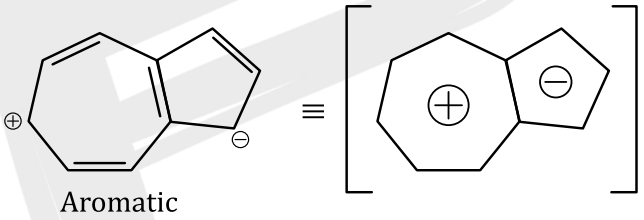
(2) $C_4H_4^{2+}$ ⇒  ⇒ Aromatic

(3)  ⇒ Aromatic

(4)  ⇒ Aromatic

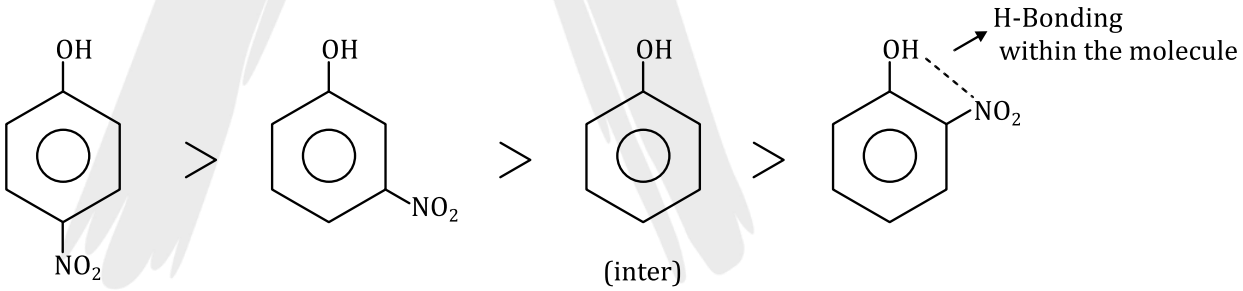
(5) 

⇒ Anti Aromatic

(6) 1,2,3,4,6 ⇒ Aromatic Azulene ⇒ 

Aromatic

2.



(P-nitrophenol)

⇒ Intermolecular H-Bonding

(inter)

(P) > (S) > (Q) > (R)

⇒ The boiling point increases with increasing the capability of inter molecular hydrogen bond formation.

⇒ the boiling by the two M-nitrophenol & highest followed by the ortho-nitrophenol this is due to the intermolecular hydrogen bonding in P-nitrophenol which is absent in both meta & ortho.

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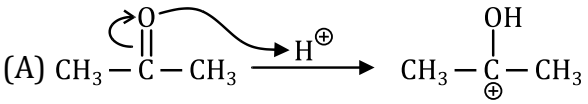
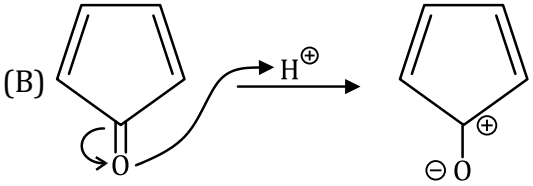
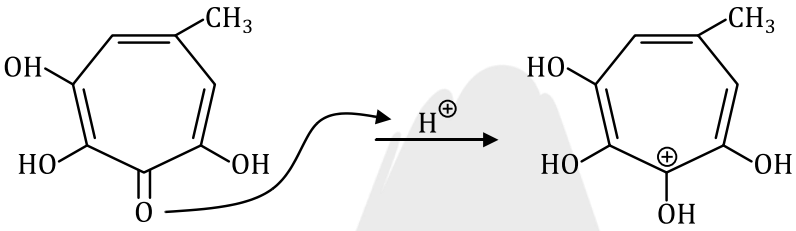
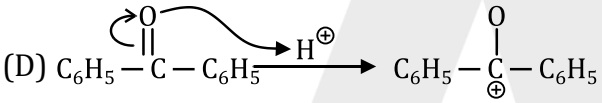
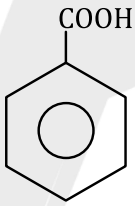
3. (A) 

(B) 

(C) Aromatic most stable

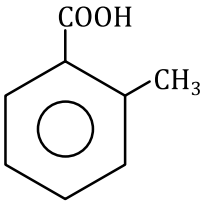


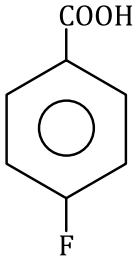
(D) 

4. (A) benzoic acid ⟶ 

(B) ethanoic acid ⟶ $CH_3 - COOH$ ⟶ Two identical Resonance

↳ Less solvation

(C) O-methyl benzoic acid ⟶  ⟶ most acidic due to ortho ether

(D) P-flouro benzoic acid ⟶ 

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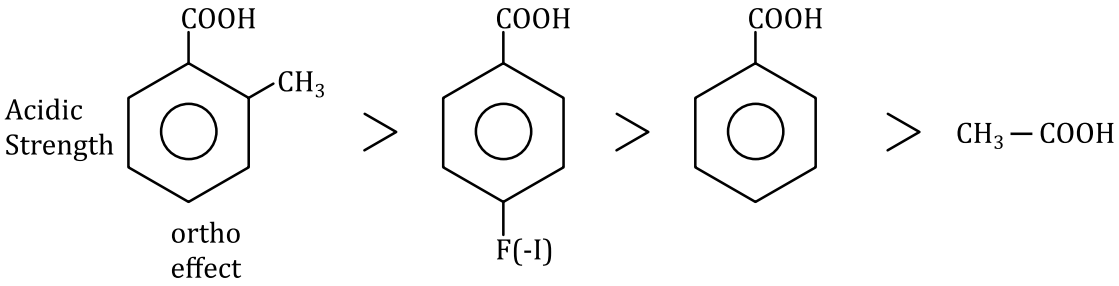
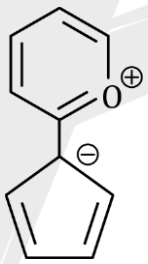


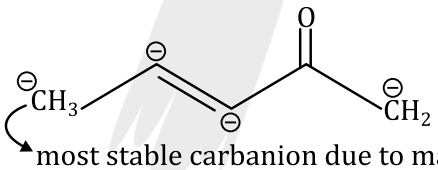
	(C)	>	(D)	>	(A)	>	(B)
	↓		↓		↓		↓
P Ka ⟹	4.74		4.17		4.14		3.19
	(R)	>	(P)	>	(Q)	>	(S)

5. Complete octet of oxygen atom.

Hence most stable (B)

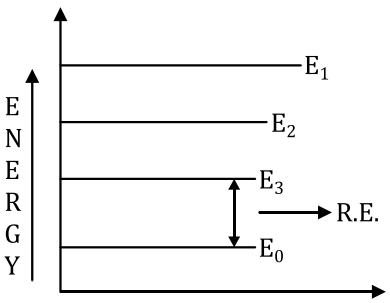


6.



most stable carbanion due to maximum delocalization of carbanion (extended conjugation)

7. (C) $E_3 - E_0$



Hence resonance energy (R.E.) will be $E_3 - E_0$

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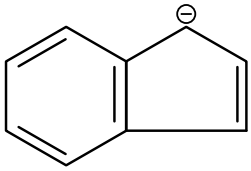
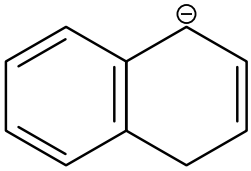
8.



⇒ Aromatic
⇒ largest conjugation
⇒ more acidic

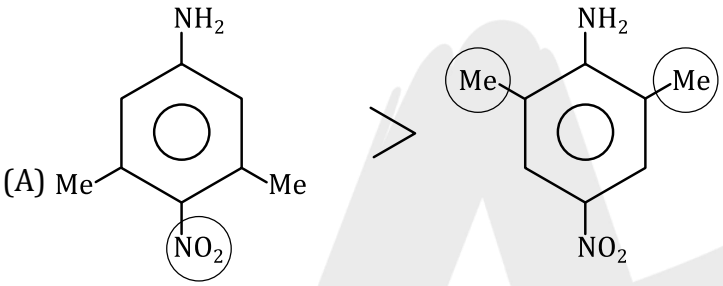


⇒ less conjugation
⇒ less stable conjugate base
⇒ less acidic

(I > II) (Because both ring are aromatic)

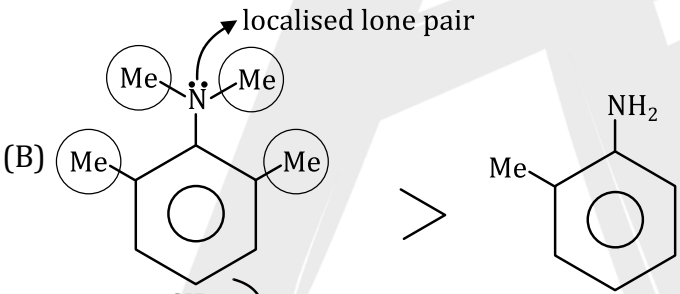
9.

(A)

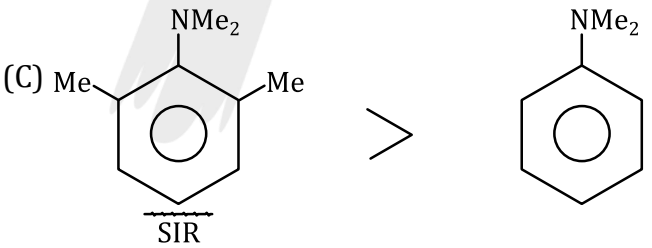


(-I)SIR affect ⇒ less solvation

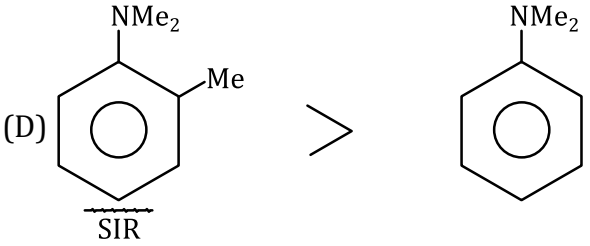
(B)



(C)



(D)



(A,C,D) Correct

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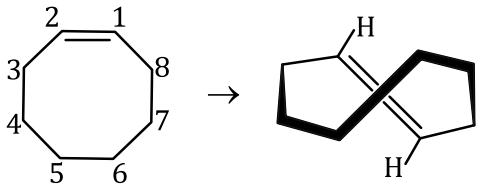
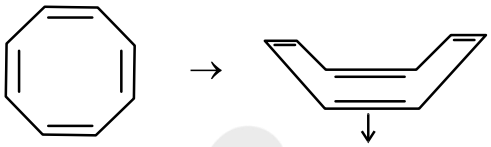
10. HOH of cyclooctene = -23 kcal/mol^{-1}

HOH of cyclooctatetraene = -98 kcal/mol^{-1}

Cyclooctene 

Cyclooctatetraene 

Non aromatic
due to tub like shape