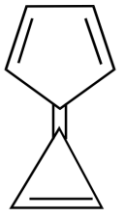
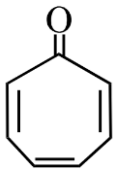
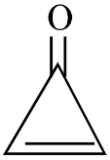
DPP-02

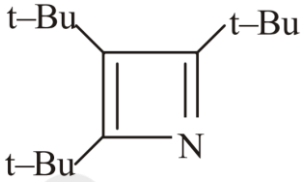
1. Among the following compounds how many are aromatic in nature:

(1) 

(2) $C_4H_4^{2+}$

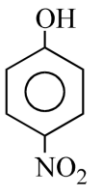
(3) 

(4) 

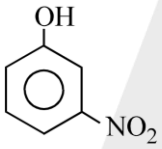
(5) 

(6) Azulene

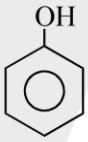
2. The correct order of boiling point is:



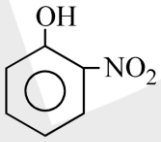
(P)



(Q)



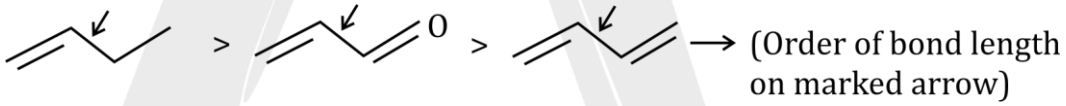
(R)



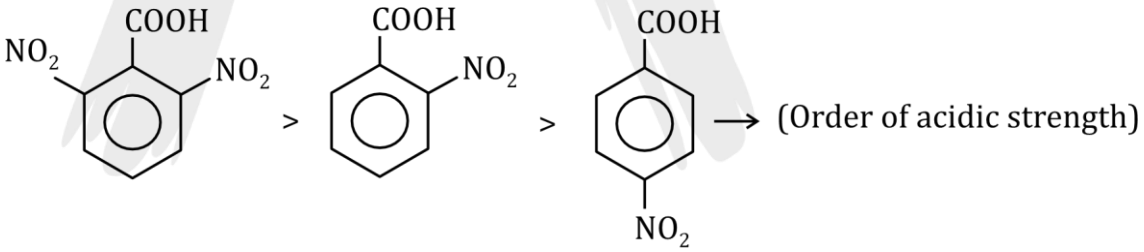
(S)

(A) P > Q > R > S (B) S > R > Q > P (C) S > P > Q > R (D) P > S > Q > R

3. Which of the following order is correct

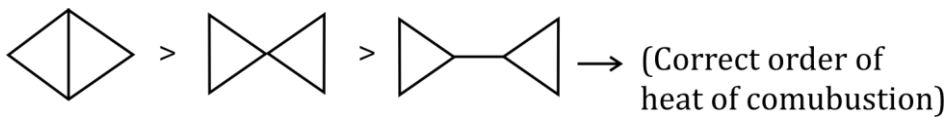
(A) 

(Order of bond length on marked arrow)

(B) 

(Order of acidic strength)

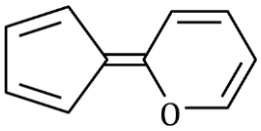
(C) $Me_2NH > MeNH_2 > Me_3N > NH_3$ (Basic strength order in H_2O)

(D) 
(Correct order of heat of comubustion)

4. Match the names of carboxylic acids in column I with pk_a value in column II:

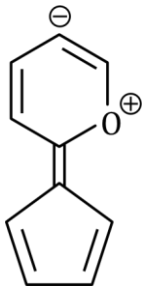
	Column I		**Column II**
(A)	Benzoic acid	(P)	4.17
(B)	Ethanoic acid	(Q)	4.14
(C)	o-methyl benzoic acid	(R)	4.74
(D)	p-flourobenzoic acid	(S)	3.91

5.

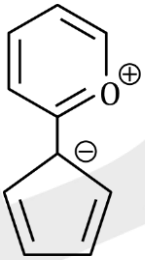


The most stable canonical structure of this molecule is

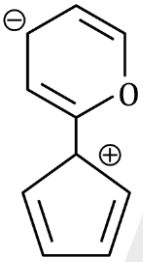
(A)



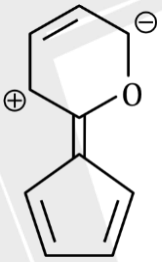
(B)



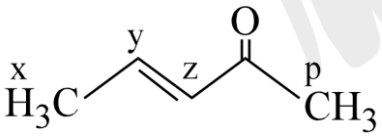
(C)



(D)



6. The abstraction of proton will be fastest in:

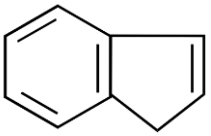
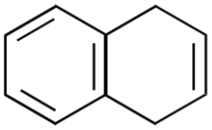


(A) X (B) Y (C) Z (D) P

7. Potential energies of three resonating structures of a compound are E_1, E_2 & E_3 respectively and energy of real molecule is E_0. If $E_1 > E_2 > E_3$ then the resonance energy will be:

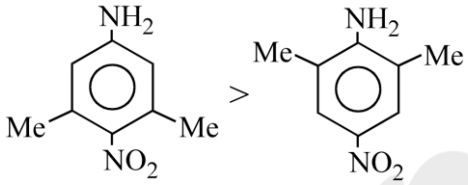
(A) $(E + E_2 + E_3) - E_0$ (B) $E_1 - E_0$ (C) $E_3 - E_0$ (D) $\frac{E_1+E_2+E_3}{3}$

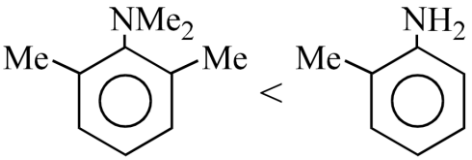
8. For the given compounds Indene (I) and dihydro naphtralene (II), compare the acidic strength:

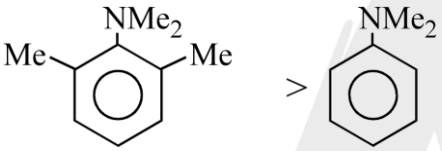
(I)  (II) 

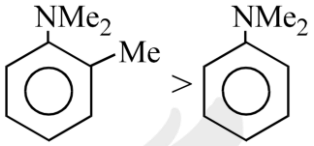
(A) (I) > (II) (B) (I) = (II) (C) (I) < (II) (D) can't predict

9. Among the following, which order regarding basicity is(are) correct :

(A) 

(B) 

(C) 

(D) 

10. The heat of hydrogenation of cyclo octene is -23 Kcalmole^{-1} and the heat of hydrogenation of cyclooctatetraene is -98 Kcalmole $^{-1}$. Cyclo octatetraene is thus :

(A) very stable having aromatic character.

(B) it is stabilised like benzene when compared with relevant hypothetical cyclic polyene.

(C) during hydrogenation it looses resonance energy.

(D) it is non aromatic & highly destabilised w.r.t. hypothetical cyclic polyene.

ANSKEY KEY

1.	**(12346)**	**2.**	**(D)**	**3.**	**(BC)**	**4.**	**(A→Q, B→S, C→R, D→P)**				
5.	**(B)**	**6.**	**(A)**	**7.**	**(C)**	**8.**	**(A)**	**9.**	**(ACD)**	**10.**	**(D)**