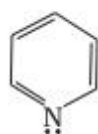


The ring systems having following characteristics are aromatic.

- (i) Planar ring containing conjugated π bonds.
- (ii) Complete delocalisation of the π -electrons in ring system i.e. each atom in the ring has unhybridised p -orbital, and
- (iii) Presence of $(4n+2)$ π -electrons in the ring where n is an integer ($n = 0, 1, 2, \dots$) [Huckel rule].

Using this information classify the following compounds as aromatic/nonaromatic.



(A)



(B)



(C)



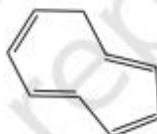
(D)



(E)



(F)



(G)

- A = Planar ring, all atoms of the ring sp^2 hybridised, has six delocalised π electrons, follows Huckel rule. It is aromatic.
- B = Has six π electrons, but the delocalisation stops at sp^3 hybridised CH_2 - carbon. Hence, not aromatic.
- C = Six delocalised π -electrons (4 π electrons + 2 unshared electrons on negatively charged carbon) in a planar ring, follows Huckel's rule. It is aromatic.
- D = Has only four delocalised π -electrons. It is non aromatic.
- E = Six delocalised π -electrons follows Huckel's rule. π electrons are in sp^2 hybridised orbitals, conjugation all over the ring because of positively charged carbon. The ring is planar hence is aromatic.
- F = Follows Huckel's rule, has 2 π electrons i.e. $(4n+2)$ π -electrons where ($n=0$), delocalised π -electrons. It is aromatic.
- G = 8 π electrons, does not follow Huckel's rule i.e., $(4n+2)$ π -electrons