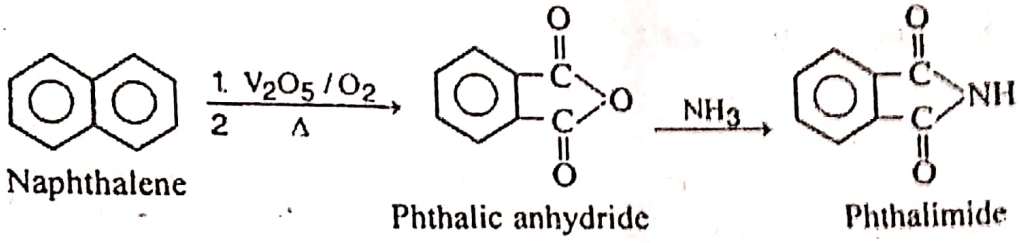
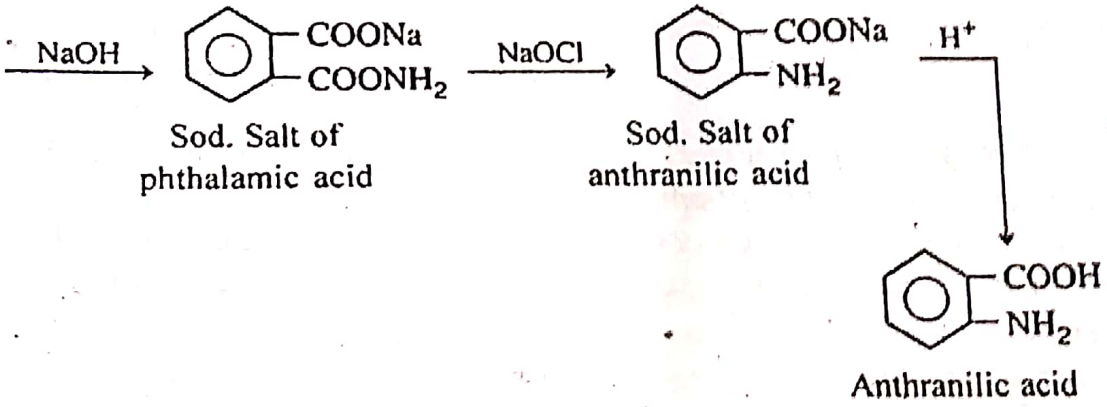
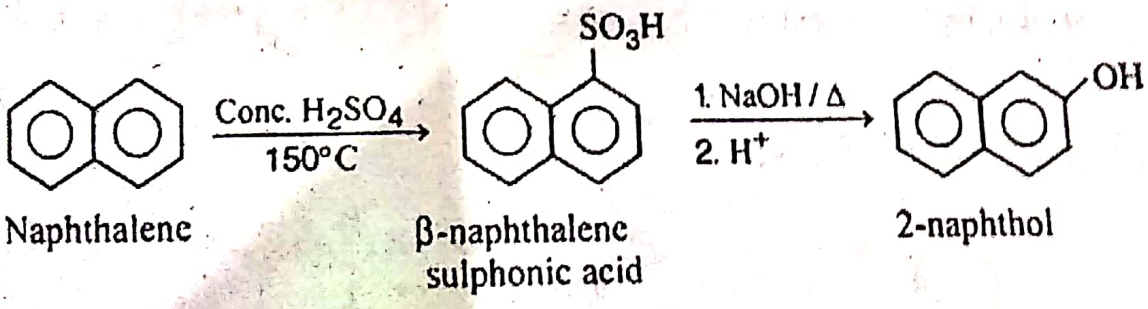
Q.41. Starting from naphthalene, how would you prepare
(i) Anthranilic acid
(ii) 2 (or β-) naphthol
(iii) α-naphthoic acid
(iv) 2-nitronaphthalene
(v) 2-aminonaphthalene
Ans. : Naphthalene to—

(i) Antharanilic acid :

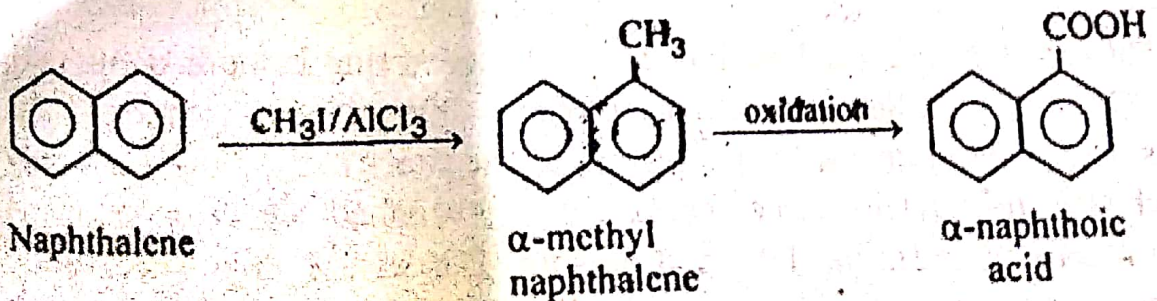




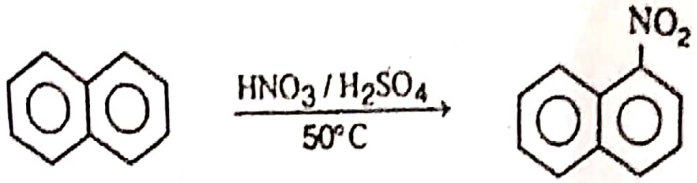
(ii) *2-naphthol* :



(iii). α-*naphthoic acid* :

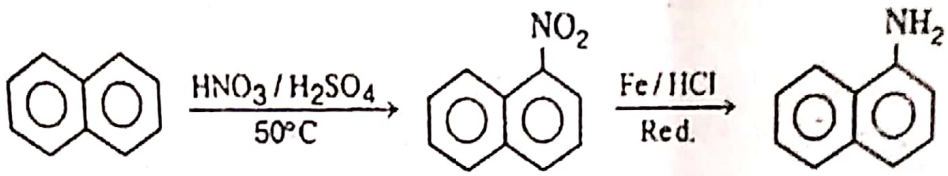


(iv) 2-*nitronaphthalene* :



Naphthalene 2-nitronaphthalene

(v) 2-*aminonaphthalene* :

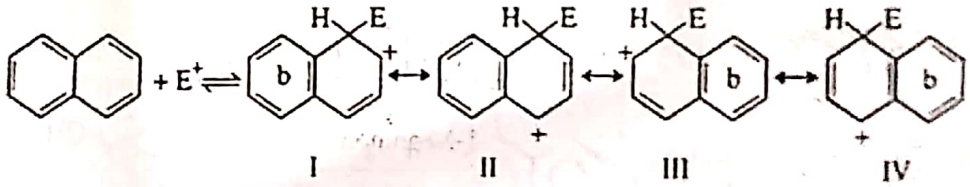


Naphthalene 2-nitronaphthalene 2-amino naphthalene

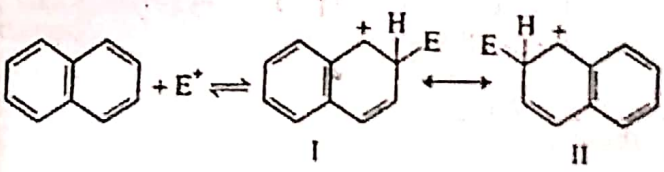
Q.42. Naphthalene is more reactive at position-1 than at position-2 in electrophilic substitution reactions—Why ?

Ans. : The relative reactivity of position-1 and position-2 of naphthalene molecule can be explained by examining the stability of the corresponding intermediates—

Attack at position—1



Attack at position – 2



The structure intermediate having one benzene ring is more stable than others. On this basis, the intermediate formed by the attack at position–1 has four resonating structures while that formed by the attack at position–2 has only two such structures in which one benezene ring is retained. Hence naphthalene is more reactive at position–1 than at position–2 in electrophilic susbtitution reactions.