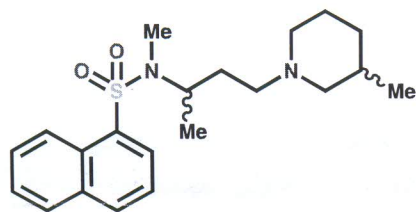
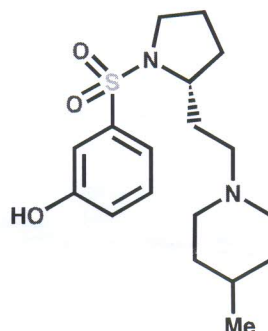




- 5 5.1 Provide one structural example for selective serotonin receptor inhibitors and tricyclic antidepressants. (20 Marks)
- 5.2 The structure A shows a lead compound for the 5HT<sub>7</sub> receptor. Explain how this compound transferred into structure B during the lead optimization process. (80 Marks)



Structure A



Structure B

- 6 6.1 Draw the structure of the morphine and discuss the structure activity relationship (SAR). (40 Marks)
- 6.2 6.2.1 Draw the structure of Naloxone (20 Marks)
- 6.2.2 Explain, how the structural knowledge of morphine helped to synthesize the antagonist Naloxone. (20 Marks)
- 7 7.1 Describe the mechanism of actions of thyroid hormones. (20 Marks)
- 7.2 Draw the chemical synthetic route of thyroxine. (40 Marks)
- 7.3 Draw a synthetic route of a thioureylenes. (40 Marks)
- 8 8.1 Describe the anti-epileptic drug mechanism that target ion-channels. (30 Marks)
- 8.2 Provide five molecular evidences for abnormalities in ion channels. (30 Marks)
- 8.3 Provide one example of an anti-epileptic drug that interacts with following drug targets: Na channel, K channel, Ca channel, NMDA receptor and GABA transporter. (40 Marks)