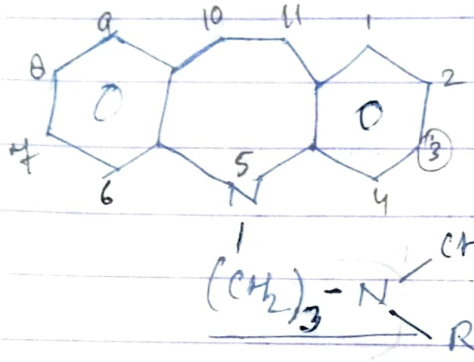
Antidepressant = Neuroleptic inhibitor

classification

(1) Tricyclic antidepressant

(a) Dibenzapéne



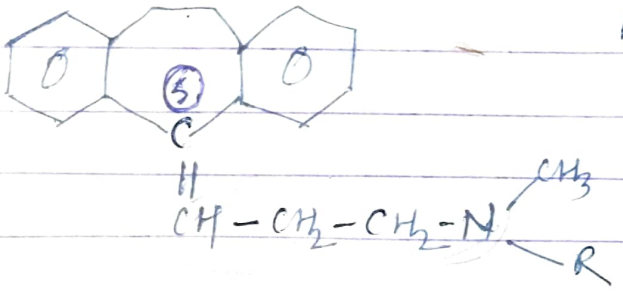
	R
Imipramine	CH_3
Desipramine	H
clomipramine	CH_3 ③ Cl
Trimipramine	$CH_2-CH-CH_2N(CH_3)_2$

Diben zapine

(b) Dibenzcycloheptanes

cyclohepten-5-ylidene

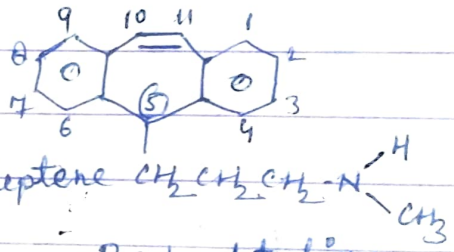
	R
Amitryptyline	CH_3
Nortryptyline	H



(2) MAO-A inhibitor

Moclobemide

clorgyline



cycloheptene $CH_2CH_2CH_2-N(H)(CH_3)$

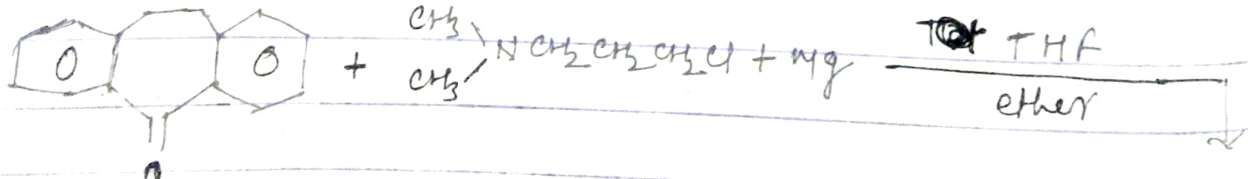
Protryptyline

N-methyl 5-Propylamine

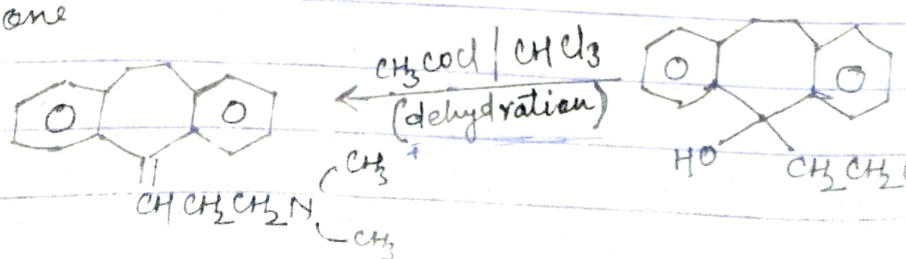
(3) ~~sefotirun~~ serotonin reuptake inhibitor

fluoxetine, Paroxetine, fluvoxamine

Amitriptyline



Dibenzocycloheptadien 5-one



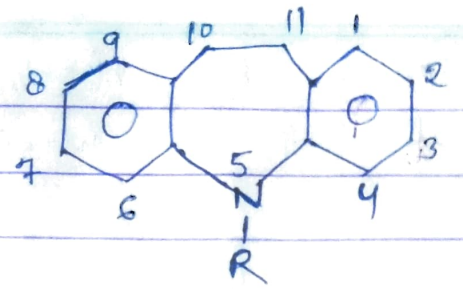
(2) NA reuptake inhibitor

Desipramine

Nortriptyline R

Tricyclic Antidepressant

SAR



(A) Variation in side chain

(1) When the basic N is separated from the tricyclic nucleus by a propylene bridge (3-C)
⇒ Maximum potency

(2) 3° amines are more potent inhibitors of 5HT reuptake
2° amine are more potent inhibitors of NE reuptake.

(3) Branching of propylene chain has little effect on antidepressant activity

(4) Larger alkyl gp on basic N abolish activity and introduce toxicity

(B) Variation in ring substituent

(1) Introduction of substituent at 3rd position has little effect. 3-chloroimipramine is similar to imipramine.

(2) 2,8 Dimethyl or 3,7 dichloro are inactive

(C) Variation in ring system

(1) If the ring N of desipramine is replaced by C ⇒ Active comp

(2) Introduction of 10,11 double bond into nortriptyline
⇒ Antidepressant activity ↑