

1.1.4. Structures, Numbering, and Corresponding Drugs of Heterocyclic Compounds

Heterocyclic rings must be numbered when different groups are present on the ring. On conventional basis, the atom which is hetero is designated as position 1 and counting of the substituents is done around the ring so that the hetero atoms get least possible numbers. However, the substituents are placed alphabetically while writing the compound name.

If more than one hetero atom is present in the heterocyclic ring, the preference order for numbering the atoms is O (oxygen), S (sulphur), and N (nitrogen). The numbering of the atoms of preference is done in such manner that hetero atoms present in ring are given the smallest possible number. As per this, there is no significant role of substituent position in the numbering of the hetero atoms present in the ring.

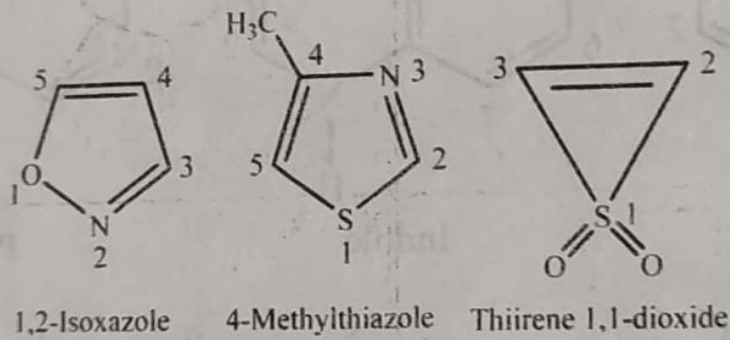
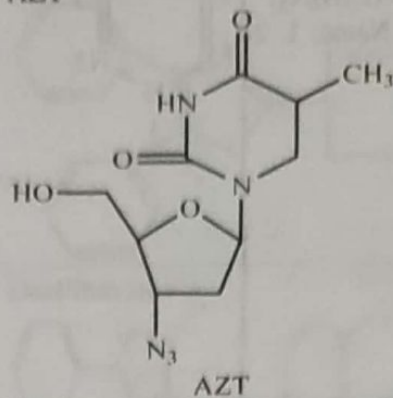


Table 1.3: Structure, Numbering, and Corresponding Drugs of given Heterocyclic Compounds

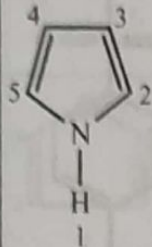
Names	Structure and Numbering	Corresponding Drugs
1) Furan (C_4H_4O) [IUPAC Oxole]		i) Furosemide

ii) AZT

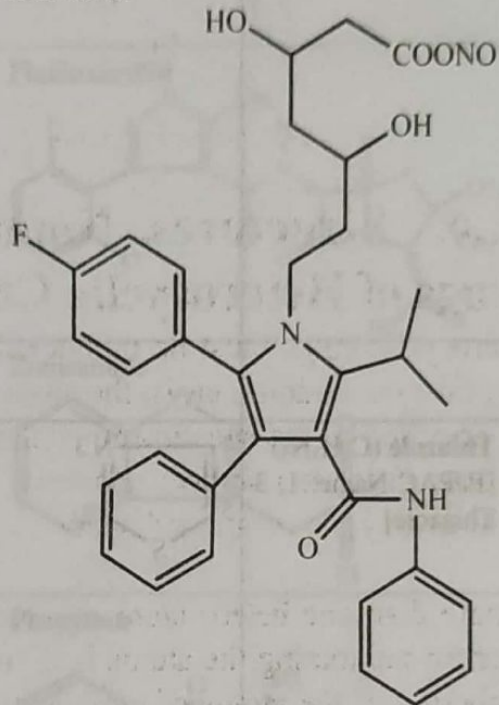


2) **Pyrrole**
(C₄H₅N)
[IUPAC
Azole]

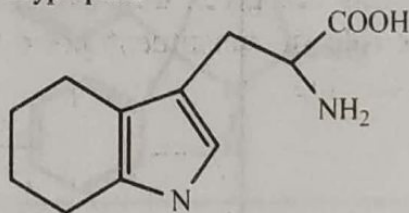
Name:



i) Atorvastatin

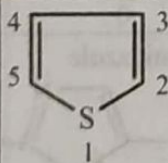


ii) Tryptophan

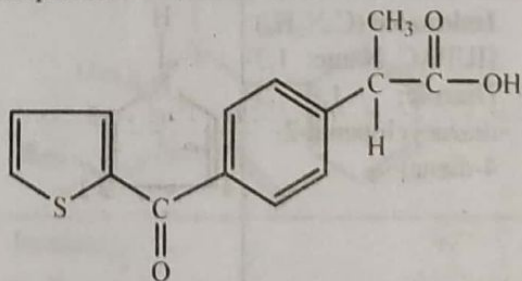


3) **Thiophene** (C₄H₄S)
[IUPAC
Thiophene]

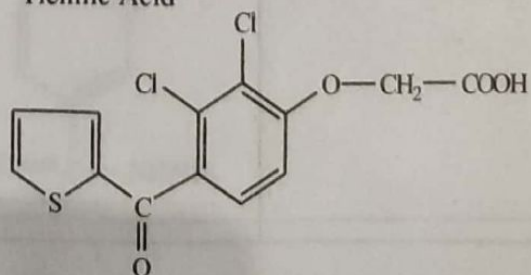
Name:



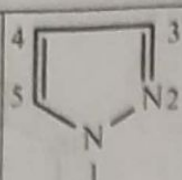
i) Suprofen



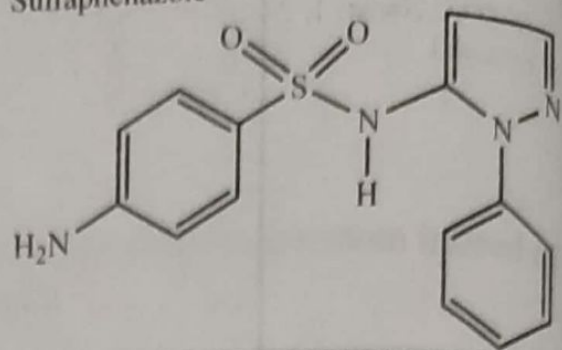
ii) Tienilic Acid



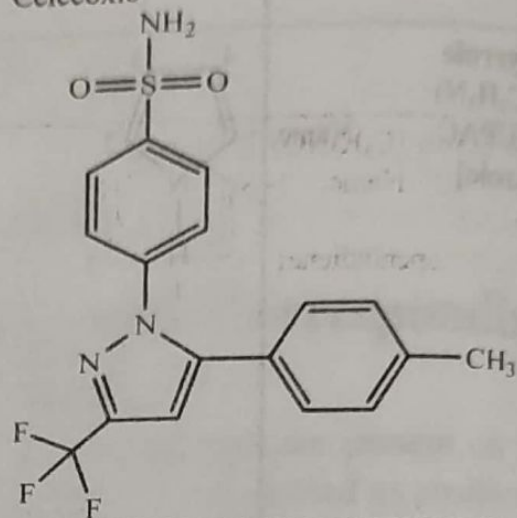
4) **Pyrazole** ($C_3H_4N_2$)
[IUPAC Name: 1, 2-diazole]



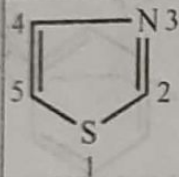
i) **Sulfaphenazole**



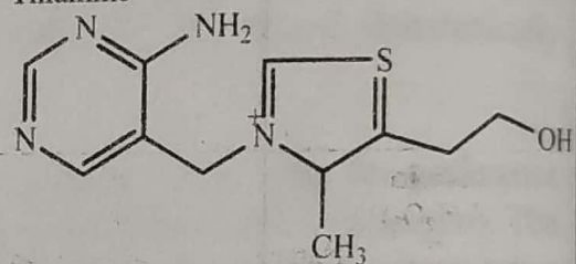
ii) **Celecoxib**



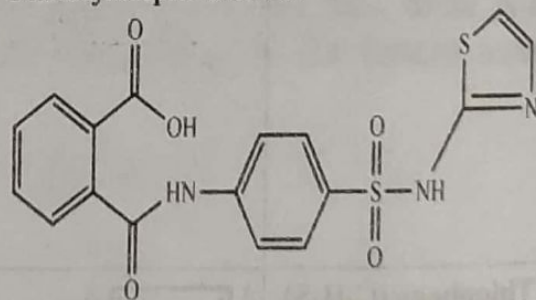
5) **Thiazole** ($C_3H_3N_2S$)
[IUPAC Name: 1, 3-Thiazole]



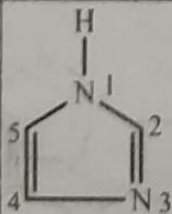
i) **Thiamine**



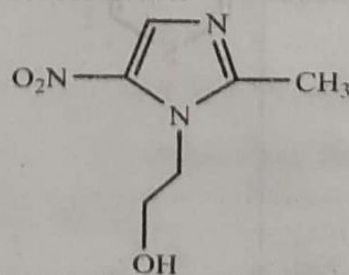
ii) **Phthalylsulphathiazole**



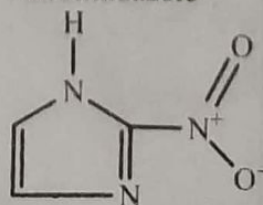
6) **Imidazole** ($C_3N_2H_4$)
[IUPAC Name: 1,3-Diazole; 1, 3-diazacyclopenta-2, 4-diene]

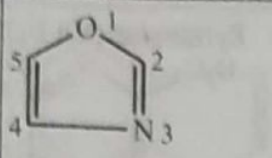
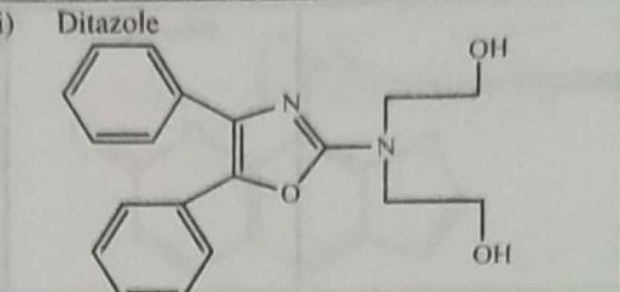
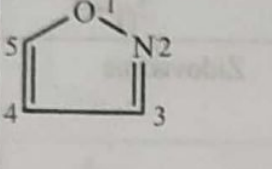
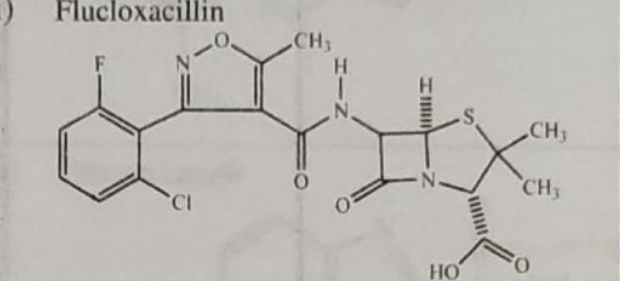
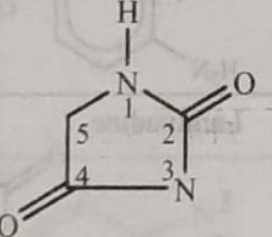
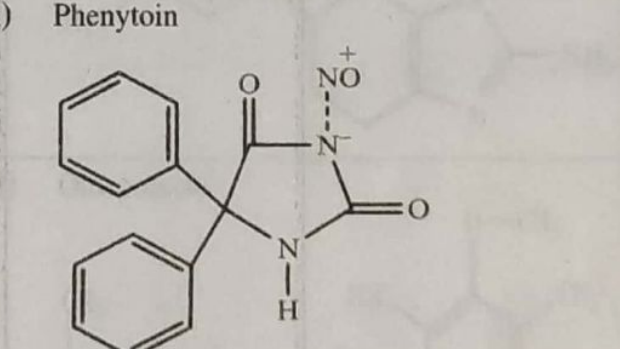
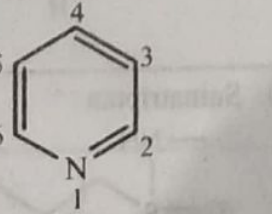
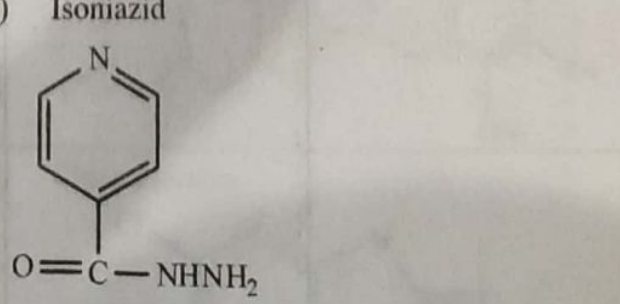


i) **Metronidazole**

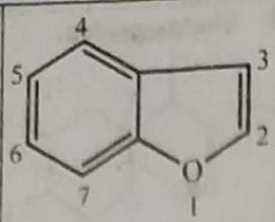


ii) **Nitroimidazole**

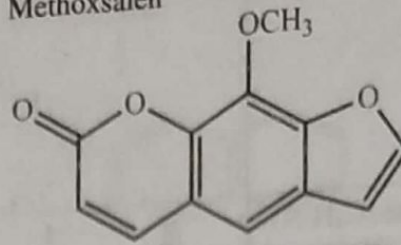


<p>7) Oxazole (C_3H_3NO) [IUPAC Name: 1, 3-oxazole]</p>		<p>i) Ditazole</p> 
<p>8) Isoxazole (C_3H_3NO) [IUPAC Name: 1-Oxa-2-azacyclopentadiene]</p>		<p>i) Flucloxacillin</p> 
<p>9) Hydantoin ($C_3H_4N_2O_2$) [IUPAC Name: Imidazolidine -2, 4-dione]</p>		<p>i) Phenytoin</p> 
<p>10) Pyridine (C_5H_5N) [IUPAC Name: Pyridine]</p>		<p>i) Isoniazid</p> 

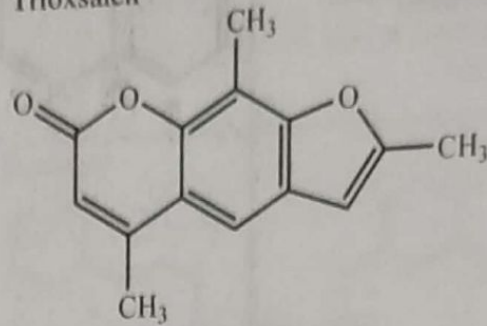
14) **Benzofuran**
(C_8H_6O)
[IUPAC Name: 1-Benzofuran]



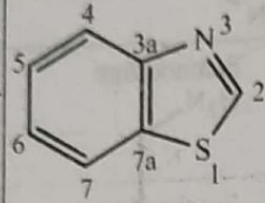
i) Methoxsalen



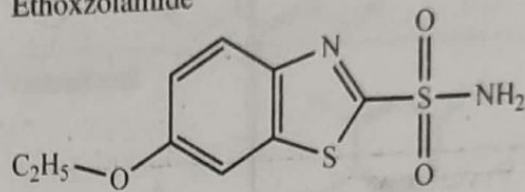
ii) Trioxsalen



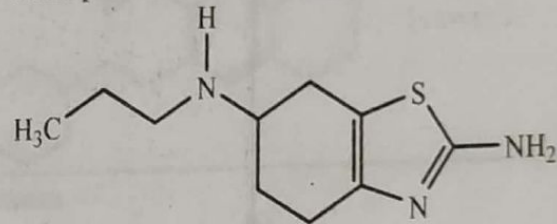
5) **Benzothiazole**
(C_7H_5NS)
[IUPAC Name: 1, 3-Benzothiazole]



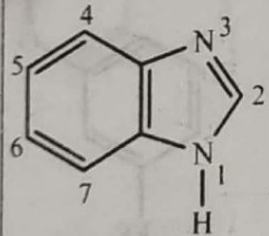
i) Ethoxzolamide



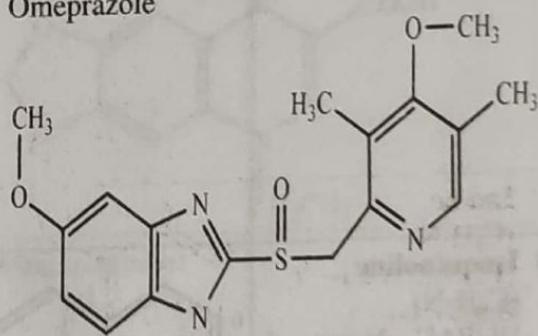
ii) Pramipenole



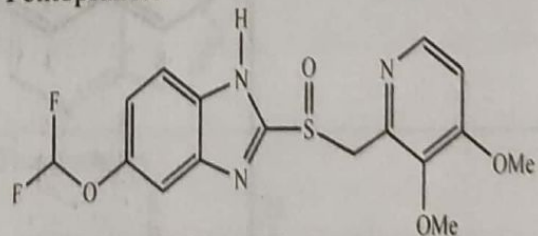
6) **Benzimidazole**
($C_7H_6N_2$)
[IUPAC Name: 1, 3-Benzodiazole]



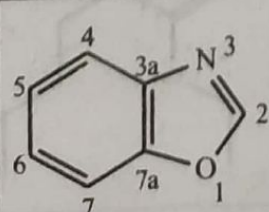
i) Omeprazole



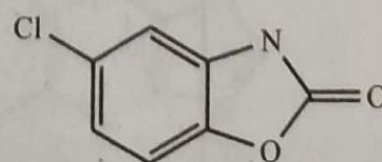
ii) Pentoprazole



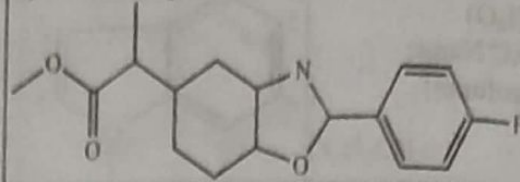
7) **Benzoxazole**
(C_7H_5NO)
[IUPAC Name: 1-Oxa-3-azo-1H-indene]



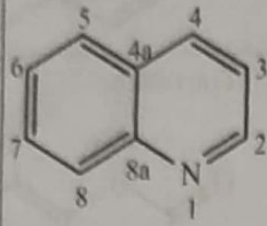
i) Chlorzoxazone



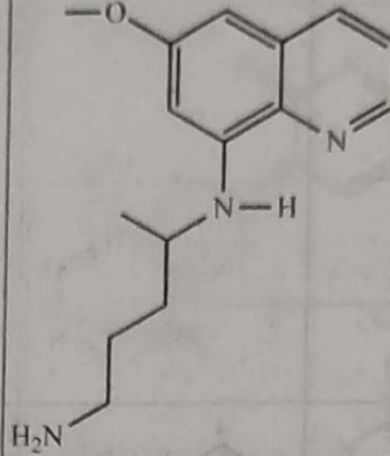
ii) Flunoxaprofen



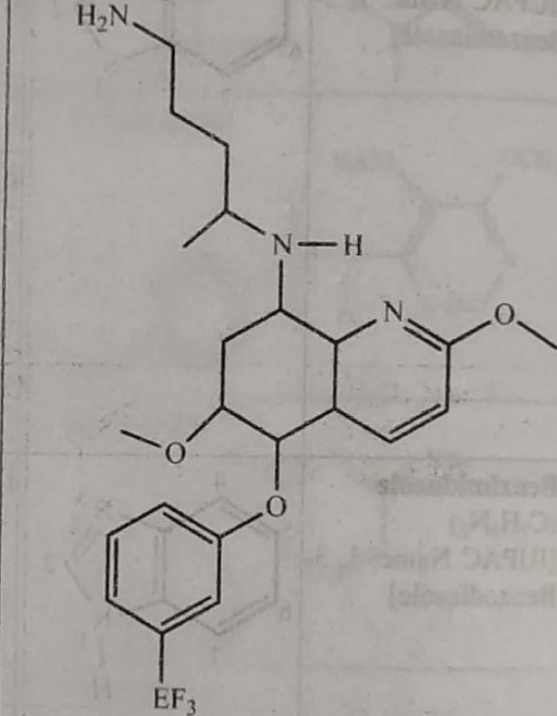
18) Quinoline (C₈H₇N)
[IUPAC Name: 1-Benzopyridine]



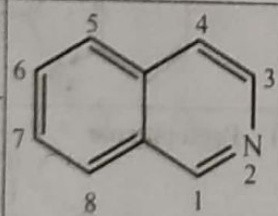
i) Primaquine



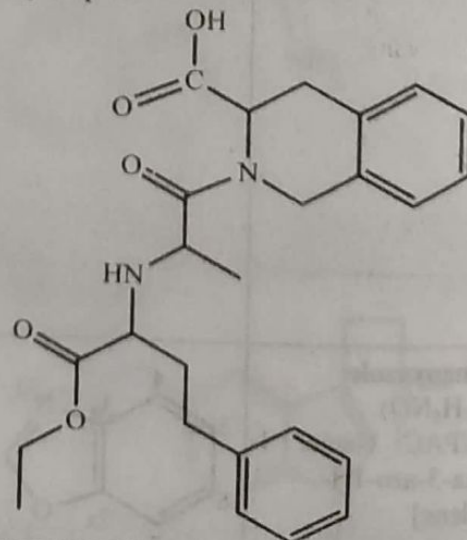
ii) Tefenoquine

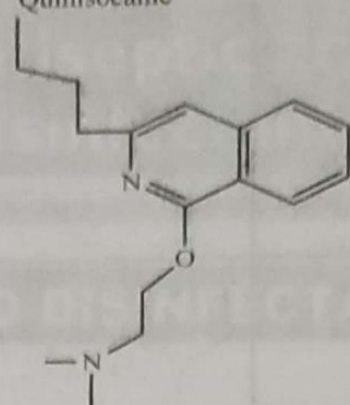
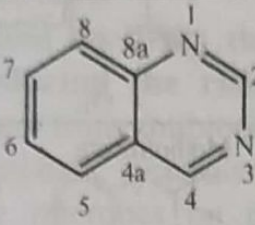
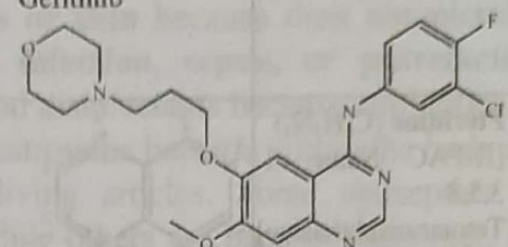
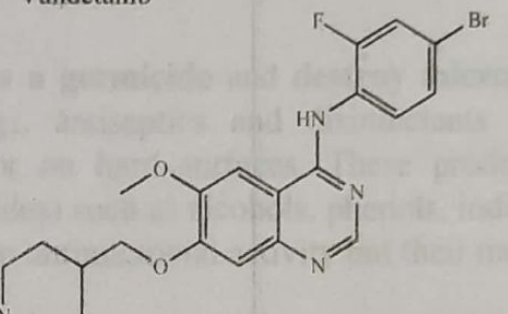
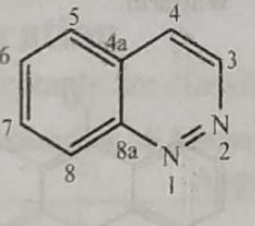
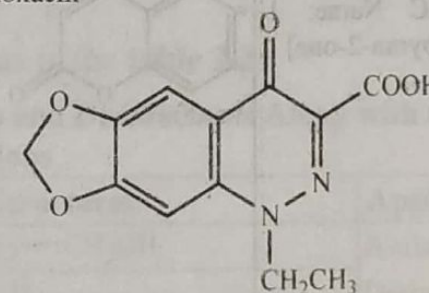
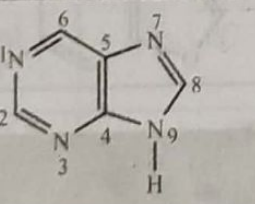
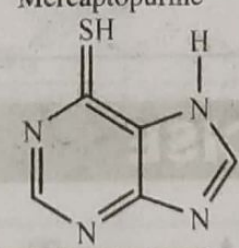
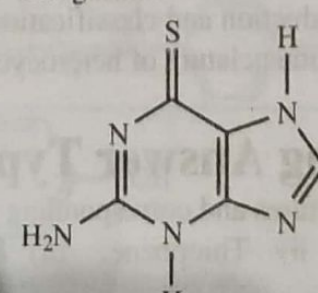


19) Isoquinoline (C₉H₇N)
[IUPAC Name: 2-Benzaniline]

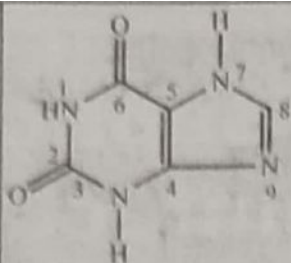


i) Quinapril

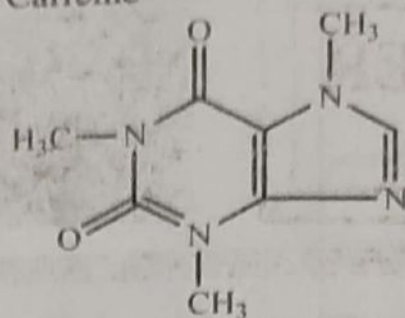


		<p>ii) Quinisocaine</p> 
<p>0) Quinazoline ($C_8H_6N_2$) [IUPAC Name: 1, 3-diazanaphthalene]</p>		<p>i) Gefitinib</p>  <p>ii) Vandetanib</p> 
<p>1) Cinnoline ($C_8H_6N_2$) [IUPAC Name: Benzopyridazine]</p>		<p>Cinoxacin</p> 
<p>2) Purine ($C_5H_4N_4$) [IUPAC Name: 9H-purine]</p>		<p>i) Mercaptopurine</p>  <p>ii) Thioguanine</p> 

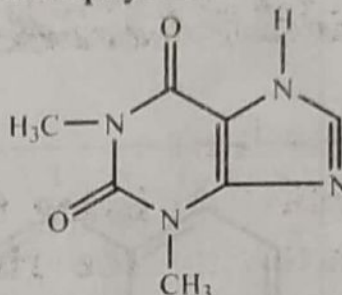
23) **Xanthine** ($C_5H_4N_4O_2$)
 [IUPAC Name: 3, 7-Dihydropurine-2, 6-diene]



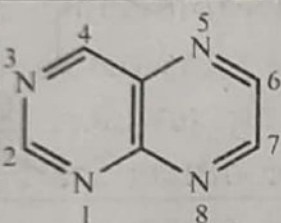
i) **Caffeine**



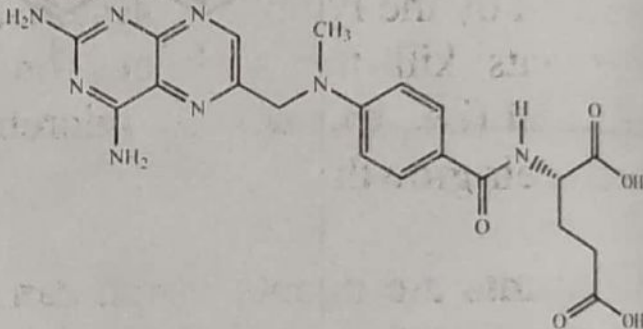
ii) **Theophylline**



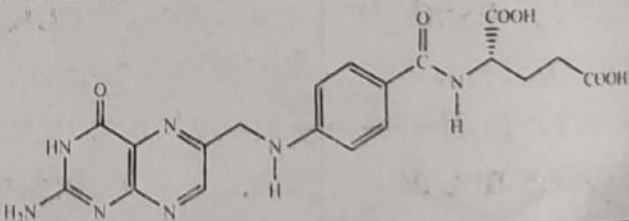
24) **Pteridine** ($C_6H_4N_4$)
 [IUPAC Name: 1, 3, 5, 8-Tetraazanaphthalene]



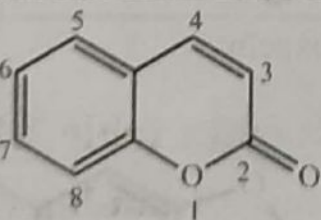
i) **Methotrexate**



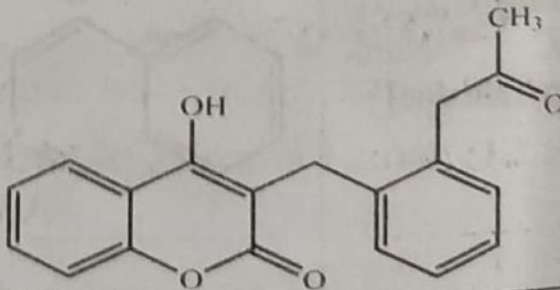
ii) **Folic Acid**



25) **Coumarin** ($C_9H_6O_2$)
 [IUPAC Name: 1-benzopyran-2-one]



i) **Warfarin**



ii) **Psoralene**

