

Q.P. Code : 501802

( 2 Hours)

[ Total Marks : 40

**N.B. :** (1) Question No.1 is **compulsory**.(2) Attempt any **four** questions out of the remaining **six** questions.

1. (a) Write the structure and major therapeutic use of the following: 4
- (i) 2-chloro-9-(3'-dimethylaminopropylidene) thioxanthene
  - (ii) Trans-2-phenylcyclopropylamine
  - (iii) 6-(2,3-Dichlorophenyl)-1,2,4-triazine-3,5-diamine
  - (iv) [2-(carbamoyloxymethyl)-2-methylpentyl] N-butylcarbamate
- (b) Give the structure and major therapeutic use of the following: 4
- (i) Acyclic sulphonamide derivative with COX enzyme inhibitory activity.
  - (ii) A ureide anticonvulsant which binds to voltage gated sodium channels.
  - (iii) A selective serotonin reuptake inhibitor having a secondary amine functional group.
  - (iv) A pyrazine analogue having uricosuric activity.
2. Account for the following (any **four**): 8
- (i) Chlorpromazine is an antipsychotic but its structural analogue promethazine is an antihistamine.
  - (ii) Meperidine and methadone have similar analgesic properties as morphine.
  - (iii) Methadol is a better drug than methadone.
  - (iv) 1, 3, 5, 5-tetrasubstituted barbiturates are inactive.
  - (v) Amantadine is CNS active.
  - (vi) Lipophilicity and weakly acidic character are important for CNS activity in barbiturates.
3. (a) Discuss various types of seizures with symptoms and drugs used for their treatment. 4
- (b) Give the mechanistic based classification of anti-depressant drugs. To which class the following drugs belong: 4
- Amisulpride, Trazadone, Doxepin and Fluoxetine.
4. (a) Discuss the drug treatment of Parkinson's disease. 4
- (b) Write a note on COX-2 inhibitors. 4

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5. (a) Discuss various modifications of morphine; and account for the retention of activities of mu receptor agonists. 4
- (b) Discuss the metabolism of the following drugs. Indicate in each case whether the metabolites are active or not (any **two**):- 4
- (i) Haloperidol
  - (ii) Chloral Hydrate
  - (iii) Carbamazepine
6. (a) Discuss in detail SAR of benzodiazepines. What are the effects of conformational changes on the activity of benzodiazepines? 4
- (b) Discuss the mechanism of action of phenothiazines in treating psychosis. What are the essential substituents which lead to potent activity. 4
7. (a) Outline the synthesis of the following (any **two**): 6
- (i) Clonazepam
  - (ii) Diclofenac
  - (iii) Doxepine
- (b) Account for the role of pyridine ring in increasing the activity of piroxicam. 2