

[Time: Two Hours]

[Marks:40]

Please check whether you have got the right question paper.

- N.B:
1. Question No.1 is compulsory.
  2. Answer any four questions from the remaining six questions.
  3. Figures to the right indicate full marks.

- Q.1** Answer the following as directed (**Any eight**) (08)
- a) Give the generic name and structure of an anticancer alkylating agent.
  - b) Structure and chemical name of the main metabolic product of lignocaine on hydrolysis.
  - c) Give the generic name and structure for an antiulcer agent containing furan ring.
  - d) Give the generic name and structure of Reverse Transcriptase Inhibitor with -azido group.
  - e) Give the generic name and structure for a nitrosourea used against brain tumors.
  - f) Name the enzyme on which voglibose acts.
  - g) Give the generic name and structure of a pyrazinoyl guanidine diuretic agent.
  - h) Give the structure of a primary oxidative metabolite of terfenadine.
  - i) Give the generic name and structure of an endogenous glucocorticoid.
- Q.2** (a) Outline the synthesis of **any two** of the following with necessary reagents and appropriate reaction conditions. (06)
- 1) Cimetidine
  - 2) Benzocaine
  - 3) Acetalzamide
- (b) Write the mechanism of action of metformin. (02)
- Q.3** (a) Give reactions to show how the alkylating agent Procarbazine is activated *in vivo*. (04)
- (b) Draw the structure of testosterone. Show numbering of the steroidal nucleus. Give any two important SAR points pertaining to its structure. (04)
- Q.4** (a) 'Electron donating substituents increase binding of Local Anaesthetics to the receptor'. Explain with examples. (04)
- (b) Write a note on 'Anti – estrogens', give suitable examples with structures. (04)

P.T.O

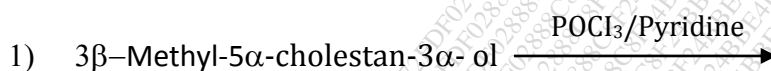
Q.5 (a) Classify antiviral agents based on the lifecycle of HIV. Support your answer with suitable examples and structures. (04)

(b) Write a note on pyrimidine antimetabolites. (04)

Q.6 (a) Give the Mechanism of action for (any two) (04)

- 1) 6 – Mercaptopurine
- 2) Tolbutamide
- 3) Omeprazole

(b) Complete the following reactions: (02)



(c) Give the structure and use of an anabolic steroid. (02)

Q.7 Write notes on any two of the following. (08)

- 1) Proton pump inhibitors
- 2) High ceiling Loop Diuretics
- 3) Anticancer antibiotics