Q.P. Code : 01908

[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) Generic name and structure of pyrimidine antimetabolite.
b) Structure and chemical name of an amino ester local anesthetic agent.
c) Generic name and structure of a second generation H_1 – antagonist.
d) Generic name and structure of a DNA polymerase inhibitor.
e) Generic name and structure of a platinum complex alkylating agent.
f) Name the enxyme that is inhibited by acarbose.
g) Draw the structure of site II diuretic agent.
h) Generic name and structure of H_2 receptor antagonist with a furan ring.
i) Generic name and structure of an endogenous androgen.

Q. 2 a) Outline the synthesis of **any two** of the following with necessary reagents and appropriate reaction conditions. **(06)**

i) Acetazolamide
ii) Amantadine
iii) Tolbutamide.

b) Write the mechanism of action of Omeprazole. **(02)**

Q. 3 a) Depict the activation and give the mechanism of action of 6-mercaptopurine. **(04)**

b) Discuss the SAR of sulfonylurea class of hypoglycemic agents with suitable examples. **(04)**

Q. 4 Answer in brief **(any four)** **(08)**

i) Compare the rate of hydrolysis of cholestanol acetate and epicholestanol acetate. Justify.
ii) List any two classes of anti-viral agents, giving one example from each class.
iii) Give the generic name, therapeutic use and nomenclature of a non-steroidal estrogen.
iv) Give the products obtained on reduction of 5β-cholestan-3-one under acidic and neutral conditions.
v) Compare the structures of folic acid and methotrexate and highlight the structural changes that lead to alteration in activity.

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Q. 5 a) Classify diuretics based on their site of action at the nephron, giving one example from each class (include structures) **(04)**

b) Draw the structure of hydrocortisone. Show numbering of the steroidal nucleus. Give any two important SAR points pertaining to its structure. **(04)**

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

i) Vincristine
ii) Ciglitazone
iii) Procaine

b) Complete the following reactions: **(02)**

i) 3α -Methyl-5α-cholestan-3β-ol $\xrightarrow{POCl_3/Pyridine}$

ii) 2-Cholestene $\xrightarrow{Br_2}$

c) Depict the chemical class for the following local anesthetics: Pramoxine and tetracaine. **(02)**

Q. 7 Write notes on **any two**. **(08)**

a) Reverse transcriptase inhibitors
b) Proton pump inhibitors
c) Potassium sparing diuretics
