

(2½ Hours)

12/10/13

[Total Marks : 60]

- N.B. :** (1) All questions are compulsory.
(2) Figures to the right indicate full marks.

1. (a) Explain the following terms :— 4
 (i) Drug toxicity
 (ii) Bioavailability
 (iii) Pharmacodynamic agents
 (iv) Drug potency.
- OR**
- (a) (i) How are drugs classified on the basis of their therapeutic action ? 3
 (ii) Explain the term Pro-drug. 1
 (b) Give the synthesis of Phenytoin. Write its therapeutic use. 4
- OR**
- (b) (i) Give the synthesis of Methyl phenidate. 3
 (ii) Explain the term Brand name. 1
 (c) (i) Discuss advantages and disadvantages of parenteral route of drug administration. 2
 (ii) Explain the terms :— 2
 (1) Therapeutic Index
 (2) Spurious drugs.
- OR**
- (c) (i) Give the synthesis of Tremadol. 2
 (ii) Give on account of different dosage forms. 2
2. (a) (i) What are the characteristics of inflammation ? 1
 (ii) How is histamine released in the body ? 1
 (iii) Give the synthesis of Furosemide. 2
- OR**
- (a) (i) Classify Cardiovascular agents on the basis of their pharmacological action. 1
 (ii) Give the synthesis of Aceclofenac. 3
- (b) (i) Discuss insulin therapy for the treatment of Diabetes. 1
 (ii) Give the synthesis of Cetirizine. 3
- OR**
- (b) (i) Explain the terms – Ketonuria and Polydipsia. 1
 (ii) Write the therapeutic use of the drug Ethopropazine hydrochloride. 1
 (iii) Give the synthesis of the drug Levodopa. 2
 (c) (i) What are Antitussives ? 1
 (ii) Write the structure of the drug Isosorbide dinitrate. 1
 (iii) Discuss the mode of action of Diphenhydramine as an antihistaminic agent. 2
- OR**
- (c) (i) What are decongestants ? 1
 (ii) Write the therapeutic use of Nifedipine. 1
 (iii) Discuss the mode of action of Atenolol as β – 1 blocker. 2

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3. (a) (i) State the important milestones in the development of synthetic dyes. 3
 (ii) Explain the term auxochrome. 1
OR
- (a) (i) Write the limitations of the natural colouring matters. 2
 (ii) Explain the term colour index. What do the suffixes 'G' and 'S' indicate in the nomenclature of commercial dyes? 2
- (b) Classify the following dyes based on constitution giving structure :— 4
 (i) Naphthol Blue Black
 (ii) Chrome Violet.
OR
- (b) Give one example with structure of the following chemical classes of dyes :— 4
 (i) Anthraquinone
 (ii) Azine.
- (c) (i) Write a note on azoic dyes. 2
 (ii) Classify giving structure Eriochrome Black A on the basis of application. 2
OR
- (c) (i) Give an account of reactive dyes. 2
 (ii) Write the structure of Victoria Blue B and classify it on the basis of application. 2
4. (a) (i) Explain the terms (1) chromophore and (2) complementary colours. 2
 (ii) 'Nitrobenzene is pale yellow whereas P-nitroaniline is dark yellow in colour. Explain. 2
OR
- (a) (i) Give the limitations of the Armstrong theory of colour and chemical constitution. 2
 (ii) 'Congo Red is blue in acidic medium but turns red in alkaline medium.' Explain. 2
- (b) (i) Write a note on leather dyes. 2
 (ii) Give the important characteristics of foodstuff dyes. 2
OR
- (b) (i) Give the name and structure of a pigment used in producing coloured smoke. 2
 (ii) Write a note on paper dyes. 2
- (c) (i) Explain the term 'optical brighteners'. Give an example with structure of an optical brightener belonging to the coumarin class. 2
 (ii) Discuss two important characteristics and two uses of organic pigments. 2
OR
- (c) (i) Discuss the important characteristics of optical brighteners. 2
 (ii) What are organic pigments? Give one example with structure of an organic pigment belonging to the azo class. 2

5. Attempt any **three** of the following :—

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| (a) (i) Give an account of analgesics and antipyretics. | 2 |
| (ii) Explain the terms :— | 2 |
| (1) ED_{50} | |
| (2) Systematic name. | |
| (b) (i) Write the structure and chemical class of the drug Trimethadione. | 2 |
| (ii) (1) On the basis of pharmacological action, which class of Cardiovascular drugs is used to treat Angina Pectoris and why ? | 1 |
| (2) What are the symptoms of Parkinson's disease ? | 1 |
| (c) (i) Give the synthesis of Salbutamol. | 2 |
| (ii) Write the structure and chemical class of the drug Glibenclamide. | 2 |
| (d) (i) Discuss any four characteristics properties of a good dye. | 2 |
| (ii) 'Anthraquinone dyes are deeply coloured'. Explain. | 2 |
| (e) (i) Classify Perlon Fast Blue FFR on the basis of application giving structure. | 2 |
| (ii) Write the structure of Caledon Jade Green and classify it on the basis of application. | 2 |
| (f) (i) Give one example with structure of a laser dye. | 2 |
| (ii) Give an account of dyes used as indicators in two different types of titrations. | 2 |
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