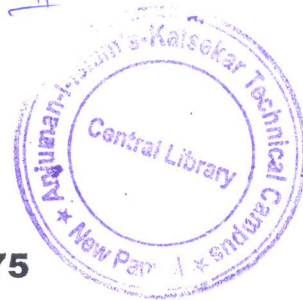


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Pharmaceuticals - II



QP Code : 02075

( 2 Hours )

[ Total Marks : 40 ]

- N.B. :** (1) Question No.1 is **compulsory**.  
(2) Answer any **four** questions from **remaining**.  
(3) Draw structures wherever **applicable**.

1. State **true** or **false** and justify your answer :- 8
  - (a) Agar is made up of amylose and amylopectin.
  - (b) Aqueous solution of acacia produces blue colour when heated with benzidine in alcohol and hydrogen peroxide.
  - (c) Goldbeater skin test is used to check presence of terpenoids.
  - (d) Pyrethrum has anti-malarial action.
  - (e) Rice bran oil is an irritant laxative.
  - (f) Stomatal index show changes with the age of leaf.
  - (g) Cocoa butter is obtained from animal origin.
  - (h) Extractive value gives the content of active principles in the crude drug.
  
2. (a) Describe the significance of chromatographic techniques in the quality control of crude drug. 4  
(b) Write note on Allium species. 4
  
3. (a) Explain the significance of Ash value and Extractive value. 4  
(b) Enlist sources of oil from marine origin. Give the biological source, chemical constituents and uses of any one. 4
  
4. (a) Give detailed account of Isapghol. 4  
(b) Give an account of microscopical evaluation of crude drug. 4
  
5. (a) Write note on Pyrethrum. 4  
(b) State the source, constituent and uses of – (i) Honey (ii) Tamarind. 4
  
6. (a). Write the sources, preparation and uses of Gelatin. 4  
(b) Write Biological source, method of preparation and chemical test of Pale catechu. 4
  
7. Write short notes on (any **two**) :- 8
  - (a) Acacia
  - (b) Thiophenes
  - (c) Fats from animal sources.

QP Code : 02092

(2 Hours)

[ Total Marks : 40

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

1. Answer the following as directed (any **eight**) :- 8
- Name and structure of a triazenoimidazole anticancer derivative.
  - Structure and chemical name of the main metabolic product of lignocaine on hydrolysis.
  - An antiulcerant agent which is an aminoalkyl furan derivative.
  - Name and structure of a thymidine nucleoside Reverse Transcriptase Inhibitor.
  - A nitrosourea used against brain tumors.
  - Name and structure of a hypoglycemic agent with a pyridine ring.
  - Draw the structure of a pyrazinoyl guanidine diuretic agent.
  - A primary oxidative metabolite of terfenadine.
  - A glucocorticoid with low salt retention.
2. (a) Outline the synthesis of any two of the following with necessary reagents and appropriate reaction conditions : 6
- Acetazolamide
  - Benzocaine
  - Cimetidine.
- (b) Write the mechanism of action and structure of amantadine. 2
3. (a) Give the reactions to show how the alkylating agent procarbazine is activated in vivo. 4
- (b) Draw the structure of a metaglinide oral hypoglycemic agent. Explain its mechanism of action. How does it differ from sulfonylureas ? 4
4. (a) Give the structure of testosterone. Show the numbering of the ring. Comment on the changes in biological activity of testosterone by following structural changes : 4
- Introduction of 17  $\alpha$ -Methyl group
  - Introduction of a double bond at C-1
- (b) 'Electron donor substituents increase binding of Local Anaesthetics to the receptor'. 4  
 Explain with examples.



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5. (a) Classify antiviral agents based on the points in the viral life cycle at which they act. Give examples. 4  
(b) 'DHFR Inhibitors are used as chemotherapeutic agents'. Explain with suitable examples. 4
6. (a) Give the development of sulphonylurea class of hypoglycemic agents with suitable examples. 4  
(b) Complete the following reactions : 2  
(i)  $3\beta\text{-Methyl-5}\alpha\text{-cholestan-3}\alpha\text{-ol} \xrightarrow{\text{POCl}_3/\text{Pyridine}} ?$   
(ii)  $5\beta\text{-Cholestan-3-one} \xrightarrow{\text{H}_2/\text{Pt, Acidic Solution}} ?$   
(c) Give the structure and use of two Non-steroidal Estrogens. 2
7. Write short notes (any two) : - 8  
(a) High Ceiling Loop Diuretics  
(b) Anticancer Antibiotics  
(c) Proton Pump Inhibitors.
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QP Code : 02069

(2 Hours)

[Total Marks : 40

- N.B.:** (1) Question No.1 is **compulsory**.  
 (2) Attempt any **four** questions out of remaining **six** questions.  
 (3) Draw neat diagrams wherever **necessary**.  
 (4) **Figures** to the **right** indicate **full marks**.

1. (a) Explain the following terms (any **five**) :— 5  
 (i) Bending vibration  
 (ii) Hypochromic effect  
 (iii) Residual current  
 (iv) Quenching  
 (v) Auxochrome  
 (vi) Emission wavelength  
 (vii) Deposition potential
- (b) Calculate concentration of drug in a given sample having absorbance of 0.851 at a  $\lambda_{max}$  285 nm in a 2cm cell, Molar absorptivity of the drug at 285nm is 4851, molecular weight is 245. 3
2. (a) Illustrate with the help of a ray diagram working of double beam uv-vis spectrophotometer. 4  
 (b) Discuss various factors influencing vibrational frequency in IR spectroscopy. 4
3. (a) With the help of energy level diagram explain the terms singlet state and triplet state. Give the difference between fluorescence and phosphorescence. 4  
 (b) Describe an UV assay method where bathochromic shift is used to avoid interference. 4
4. (a) Discuss sample preparation for solids in IR spectroscopy. 4  
 (b) Draw a neat labelled diagram of dropping mercury electrode and explain its construction and working. 4
5. (a) Explain primary and secondary coulometric titrations with the help of suitable example. 4  
 (b) Discuss principle involved in electrogravimetric analysis and give two applications of the same. 4
6. (a) Draw a block diagram of fluorimeter and explain in detail the role of filters. 4  
 (b) Explain simultaneous equation method in UV-Vis spectroscopy. 4
7. Write short note on (any **two**) :— 8  
 (a) Polarography  
 (b) Barrier Layer Cell & Photomultiplier tube detectors in UV  
 (c) Fingerprint region in IR.

