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Roll No. :

341551(41)

**B. Pharmacy (Fifth Semester) Examination,
Nov.-Dec. 2021**

(PCI Scheme)

(Pharmacy Branch)

MEDICINAL CHEMISTRY-II

Theory (BP501T)

Time Allowed : Three hours

Maximum Marks : 75

***Note : Read all the instruction carefully given in
Section A, B and C.***

Section-A

(Multiple Choice Questions) 20×1=20

***Note : Attempt all the questions. Each question
carries 1 mark.***

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1. Choose the correct answer :

- (i) Histamine plays an important role in initiating the body's immune response to the presence of foreign antigens and pathogens. A primary source of histamine released during inflammatory conditions are :
- (a) B cells
 - (b) Mast cells
 - (c) T lymphocytes
 - (d) All of the above
- (ii) A person is suffering from a gun-shot wound in a mall fight. After taking a brief history and exam, you decide to rapidly reduce his severe pain by administering i.v. morphine. Shortly thereafter person complains of feeling nauseous and itchy, and you notice that the skin on his neck and chest have become severly pink, when they were previously pale white. Which of the following would best reduce all of these symptoms if administered?
- (a) Adrenaline

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- (b) Cimetidine
 - (c) Diphenhydramine
 - (d) Loratidine
- (iii) Chemically Histamine is :
- (a) Beta hydroxy ethylamine
 - (b) Beta imidazoleethylamine
 - (c) Alphaimidazoleethylamine
 - (d) None of them
- (iv) Which one of the following is involved in biosynthesis of histamine :
- (a) Asparagine
 - (b) Lysine
 - (c) Histidine
 - (d) All of them
- (v) The action of histamine can be terminated via :
- (a) Cellular uptake
 - (b) Metabolism
 - (c) Desensitization of cells
 - (d) All of them

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- (vi) Which antihistamines are characterized by the presence of a CHO connecting moiety :
- (a) Aminoalkyl ethers
 - (b) Ethylenediamines
 - (c) Propylamines
 - (d) None of them
- (vii) Furan ring is present in :
- (a) Cimetidine
 - (b) Famotidine
 - (c) Ranitidine
 - (d) All of them
- (viii) Which substitution pattern is present in both the first generation and second generation antihistamines and is essential for significant H1 receptor affinity :
- (a) Di Aryl
 - (b) Nature if X atom
 - (c) Carbon chain
 - (d) Terminal Nitrogen

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- (ix) The 3D structure of insulin was determined by :
- (a) TLC
 - (b) X-ray analysis
 - (c) HPTLC
 - (d) All of them
- (x) The A chain and the B chain in insulin consist of :
- (a) Glycine and Phenylalanine residue
 - (b) Glycine and Cysteine residue
 - (c) Phenylalanine and serine residue
 - (d) Both (a) and (b)
- (xi) In general structure of sulfonylureas, position 1 consist of :
- (a) Aryl sulfonyl group
 - (b) Keto group
 - (c) Aliphatic group
 - (d) None of them
- (xii) The prominent position for aliphatic group in sulfonyl urea is :
- (a) 3rd position

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- (b) 2nd position
 - (c) 1st position
 - (d) None of them
- (xiii) The lipophilic properties of sulfonyl ureas derivative is due to which group :
- (a) Aliphatic group
 - (b) Aromatic group
 - (c) Alkyl group
 - (d) None of them
- (xiv) First generation sulfonylurea derivative is :
- (a) Tolbutamide
 - (b) Glibenclamide
 - (c) Glipizide
 - (d) All of them
- (xv) Which of the following drug is CMBA derivatives :
- (a) Repaglinide
 - (b) Rosiglitazone

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- (c) Metformin
 - (d) None of them
- (xvi) CMBA is :
- (a) Carbonylmethyl benzoic acid
 - (b) Carboxymethylbutyric acid
 - (c) Carbamoylmethoxy beta hydroxy acid
 - (d) None of them
- (xvii) Which oral hypoglycemic class composed of acid head group connected to lipophilic tail through a phenoxyalkyl linker :
- (a) Thiazolidinediones
 - (b) Metaglinides
 - (c) Bisguanidines
 - (d) Sulfonylureas
- (xviii) N, N-dimethyl imido dicarbonimidic diamide is :
- (a) Metformin
 - (b) Phenformin
 - (c) Pioglitazone
 - (d) None of them

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- (xix) Which of the following electron withdrawing group reduces local anesthetic activity :
- (a) Nitro
 - (b) Carbonyl
 - (c) Nitrile
 - (d) All of them
- (xx) A good local anesthetic agents having pKa in the range of :
- (a) 7.5 - 9.5 pKa
 - (b) 7.0 - 10.5 pKa
 - (c) 6.5 - 7.7 pKa
 - (d) 10 - 11 pKa

Section-B**(Long Answer Type Questions) 2×10=20**

Note : Attempt any two questions. Each question carries 10 marks.

2. Give structural classification of Antidiabetic agents with SAR of each class. Write the synthesis of Tolbutamide.

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3. Define local anesthetic agents. Write the significance of lipophilic centre, hydrophilic centre and intermediate chain in local anesthetic agents. Write the synthesis of Benzocaine and Procaine.
4. Define Antihistamine drugs. Give structural classification of antihistamine drugs with SAR of each class. Write the synthesis of Diphenhydramine.
5. Discuss chemistry of histamine under following :
- (i) Structure
 - (ii) Nomenclature
 - (iii) Ionisation and Tautomerism
 - (iv) Stereochemistry
 - (v) Biosynthesis
 - (vi) Types of histamine receptors

Section-C**(Short Answer Type Questions) 7×5=35**

Note : Attempt any seven questions. Each question carries 5 marks.

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6. SAR of alkylating agents with examples.
7. Write note on vasodilators.
8. Structural classification of antineoplastic agents.
9. Structural classification of proton pump inhibitors.
10. Discuss the insulin.
11. SAR of local anaesthetics.
12. Write a note on oral contraceptives.
13. Write a note on Anti-hypertensive agents.