

Total No. of printed pages = 4

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2022

D.Pharm. Part – II End-Term Examination

PHARMACEUTICAL CHEMISTRY – II

Full Marks – 80

Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Objective type (Answer all 20) (20 × 1 = 20)

(MCQ/Fill in the Blanks/One word OR one sentence questions)

I. Choose the correct one out of the four options (answer all) (15 × 1 = 15)

(i) Sulphonamides prevent the synthesis of folic acid in bacteria by inhibition of which enzyme?

- (a) Dihydropteroate Synthetase (b) Urease  
(c) Both (d) None

(ii) Which isomer of Ethambutol hydrochloride is more potent against mycobacterium?

- (a) Levoisomer (b) Dextroisomer  
(c) Racemic mixture (d) All are active

(iii) Chemical name of Dapsone which is widely used antileprotic drug-

- (a) Bis-(4-aminophenyl)-sulphone  
(b) Bis-(2-aminophenyl)-sulphone  
(c) Bis-(3-aminophenyl)-sulphone  
(d) None of the above

(iv) Chalmogra oil is used for the treatment of-

- (a) Tuberculosis (b) Malaria  
(c) Amoebiasis (d) Leprosy

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- (v) Primaquine belongs to the class of-
- (a) 4-Aminoquinolones (b) 8-Aminoquinolones  
(c) Biguanides (d) Cinchona alkaloids
- (vi) Which of the following is a direct acting cholinergic agonist?
- (a) Edrophonium (b) Physostigmine  
(c) Carbachol (d) Echothiophate
- (vii) Beta-1 receptors are dominant on which organ of human body?
- (a) Heart (b) Adipose tissue  
(c) Lungs (d) Uterus
- (viii) \_\_\_\_\_ is used as an antidote for cholinesterase inhibitors/anticholinesterases
- (a) Prazosin (b) Propanolol  
(c) Pralidoxime (d) Pyrazinamide
- (ix) Which of the following anti-depressant drug possesses a cyclopropane moiety in their structure?
- (a) Phenelzine (b) Tranylcypromine  
(c) Both (d) None
- (x) Which of the following drug/drugs possess a catechol ring moiety in their structure?
- (a) Dopamine (b) Adrenaline  
(c) Isoprenaline (d) All of the above
- (xi) Natural source of indigo carmine is \_\_\_\_\_
- (a) Azadirachta indica (b) Terminalia chebula  
(c) Indigofera tinctoria Linn (d) Mangifera indica
- (xii) 2nd generation oral antidiabetic drug — Glibenclamide belonging to which class of category?
- (a)  $\alpha$ -glucosidase inhibitor (b) DPP-4 inhibitor  
(c) Incretin antagonists (d) Sulfonylureas
- (xiii) Furosemide contains \_\_\_\_\_ moiety.
- (a) Furan (b) Thiophene  
(c) Pyrole (d) None of the above
- (xiv) Example of macrolide antibiotics-
- (a) Roxithromycin (b) Neomycin  
(c) Rifampicin (d) Griseofulvin
- (xv) Clofibrate is used as-
- (a) Diuretic (b) Lipid lowering agent  
(c) Antibiotic (d) Vitamin



II. Give answers in one line (answer all)

(5 × 1 = 5)

- (a) What is the chemical name of the vitamin B<sub>2</sub>?
- (b) Name a diagnostic agent used for liver function test.
- (c) Name a tranquillizer drug containing phenothiazine ring.
- (d) Name a natural anticoagulant which is chemically a mucopolysaccharide.
- (e) A (+) sign in the beginning of IUPAC nomenclature of chemical compounds signifies that the compound is optically active and levorotatory, true or false?

2. Short Answer (Answer 10 out of 11)

(10 × 3 = 30)

- (a) What is the difference between antiseptics and disinfectants? Give examples of both.
- (b) Classify anti-tubercular drugs. What is the major side effect of isoniazid and how can it be prevented?
- (c) What is the mechanism of action of sulphonamides? Draw the structure of sulphacetamide or dapsone.
- (d) Draw the basic steroidal nucleus with IUPAC numbering. Give properties and uses of testosterone.
- (e) Draw the structures of benzyl penicillin and phenoxymethyl penicillin. What is the mechanism of action of these two drugs?
- (f) Write short notes on local anaesthetics or antithyroid drugs.
- (g) What is the role of histamine in allergic reactions in our body? Classify anti-histaminics.
- (h) Name the two barbiturates used as "General anaesthetics". Draw structure and write the chemical name of Phenobarbitone
- (i) Write short notes of catecholamines or anti-epileptic drugs.
- (j) Why are cholinergic agonists used for eye examination? Name two cholinergic agonists used for eye examination.
- (k) Name a natural drug used in the treatment of amoebiasis. Write a note on properties and uses of any one anti-amoebic drug.



3. Long Answer Questions (Answer 6 out of 7)

(6 × 5 = 30)

- (a) What do you mean by NSAIDs? Classify them with examples of each class. Draw the structure of indomethacin.
- (b) Write a note on loop diuretics and thiazide diuretics. Give examples of each. Why is mannitol an osmotic diuretic?
- (c) Draw the structure of adrenaline and about its properties and IUPAC name. Why is adrenaline the 1st line drug for treatment of anaphylactic shock?
- (d) What do you mean by hypoglycaemic drugs? Classify them with examples in each class. Draw the structure of Phenformin with its IUPAC name.
- (e) Name an antifungal drug belonging to polyene class. Write the properties, storage conditions, uses and few available brand name of tolfanate and amphotericin.
- (f) Write in details about the classification of anti-neoplastic drugs with examples. Write the properties, uses and brand name of cisplatin.
- (g) Name two monoamine oxidase inhibitors used as anti-depressant drugs. Draw the structure of imipramine and write its IUPAC name. Write the important chemical and physical properties of Amitriptyline.

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