KATHMANDU UNIVERSITY
End Semester Examination
August/September, 2017

Mark Scored:

Level : B. Pharm.
Year : III
Course : PHAR 316
Semester : II

Exam Roll No. :
Time: 30 min
F. M. : 20

Registration No.:
Date : SEP 10 2017

SECTION "A"
[20 Q × 1 = 20 marks]

Circle the best option listed in alphabet.

1. Oxymorphone differ from morphine in having
   a. Methoxy group at C-3
   b. Saturated double bond between C-7 and C-8
   c. Methoxy group at C-6
   d. Hydroxy group at C-14

2. The functional group through which Enalprilate interact with zinc is
   a. Pyrrolidine b. Amide c. Carboxylic acid d. Aromatic ring

3. The Diuretic drug with isosteric replacement of SO_2 of Thiazide by C=O is
   a. Acetazolamide
   b. Polythiazide
   c. Indapamide
   d. Metazolon

4. Which drug given below has its solubility enhanced by Esterification?
   a. Enalpril b. Methyldopa c. Dipivefrin d. Piroxicam

5. In Diclofenac NSAID drug
   a. The phenylacetic acid ring should be on the same plane as dichloro anilino ring.
   b. Sodium salt is slow acting than Potassium salt
   c. Belongs to arylanthranilic acid derivatives
   d. Less potent than Aspirin

6. The affinity towards H2 receptor is decreased when
   a. 1, 3 tautomeric system is preserved
   b. Methyl substitution is made on the 4th position
   c. Trans rotamer
   d. Electron donating group in the side chain of imidazole ring.

7. Hypoprothrombinemia is due to .....functional group present in cephalosporin
   a. Lactam b. MTT c. Thiazine d. phenylglycine

8. One of the following drugs has quinazoline ring in its structure
   a. Doxazosin b. Clonidine c. Amlodipine d. Diltiazem

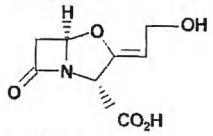
9. For the optimum activity of Aryloxypropanolamines, the 'amine nitrogen' should always be.....for optimum activity.
   a. Primary b. secondary c. tertiary d. Quaternary

10. The reverse ester of Meperidine is
    a. Prodine b. Properidine c. Anileridine d. Bemidone

11. Which one of the following does not form covalent bond with receptor?
    a. Phenoxybenzamine
    b. Ampicillin
    c. Chlorambucil
    d. Guanfacine

12. An anticancer drug, Dactinomycin has _____ ring
a. Daunosamine b. Dihydropyridine c. Phenoxazone d. Tetracycline

13. Target for the following drug is



a. Beta lactamase b. Transpeptidase c. Acylase d. L-ala racemase

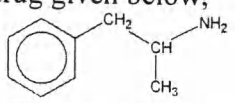
14. In Barbiturate class of drugs
a. Barbituric acid is the most potent drug
b. Stable aromatic ion favor permeation of drug through BBB
c. Attachment of alkyl substituents to both N1 and N3 renders the drug inactive
d. Generally, racemix mixture is avoided due to toxicity of one of the enantiomers

15. The imidazole class of antifungal agent has
(i) N3 of imidazole ring that react with Lanosterol-14α- demethyla
(ii) Highly selective for fungal CYP450 enzyme
(iii)Considered safer than triazole containing antifungal drug
a. i b. ii c. iii d. i and ii

16. Ketamine
(i) Can produce dissociative anaesthesis
(ii) Immediately metabolized to inactive norketamine
(iii)Acts at NMDA receptor
a. i and ii b. ii and iii c. i and iii d. i, ii and iii

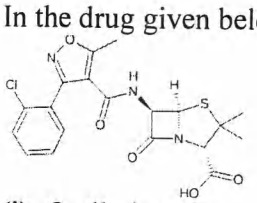
17. Ibuprofen is
(i) Given as racemic mixture (ii)Only (s) is active (iii)(R) form is inactive
a. i and ii b. ii and iii c. i and iii d. i, ii and iii

18. In the drug given below,



(i) This is a sympathomimietic drug that acts by releasing endogenous NE
(ii) Presence of β OH increase the activity
(iii)Absence of Nitrogen substituent increase the activity
a. i and ii b. ii and iii c. i and iii d. Only ii

19. In the drug given below,



(i) Orally inactive (ii) β Lactam resistant (iii) Effective against septicemia
a. i b. ii c. iii d. i and ii

20. In a drug molecule
(i) Log P represent only passive diffusion of drug across cell membrane
(ii) To have local action on the gut, the drug has to be either highly polar or highly non polar.
(iii)All drugs have single fixed pka value.
a. i and ii b. ii and iii c. i and iii d. Only ii

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SECTION "B"
[5 Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions:

1. Discuss the SAR of Sympathomimetic drugs
2. Compare between the structure of Acetylcholine and structure analogue of Atropine.
3. In drug metabolism, acetylation can generate toxic reaction. Explain.
4. Discuss on metabolism of Morphine and codeine.
5. Discuss on nucleophilic substitution and addition by GSH.
6. Explain the mechanism of action of Saquinavir.
7. Illustrate the synthesis of i) Ibuprofen and ii) Propranol.

SECTION "C"
[5Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions:

8. Write down the SAR of Benzodiazepine. Illustrate the synthesis of Triazolam. [3+2]
9. Write a note on use of ester based prodrug to enhance and reduce water solubilities.
10. Discuss the mechanism of action of Local anaesthetic drugs. Give the synthesis of Lidocaine. [3.5+1.5]
11. Discuss the acid stability and beta lactamase stability of Cephalosporin.
12. Classify antihistaminic drug. Explain the affinity of Histamine towards H1 and H2 receptor.
13. Discuss the chemistry of any two drugs used in the treatment of Tuberculosis.
14. Outline the development of captopril. How the esterification of enalaprilat improve its pharmacokinetic profile?

SECTION "D"
[2Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions:

15. Discuss Cytochrome P450 enzyme system. Mention the importance of Reduction pathway in drug metabolism. [5+2.5]
16. Discuss on Alkylating agent and novel therapies that has potential to be used in cancer treatment. [5+2.5]
17. Discuss the role of Isosterism, Partition Coefficient, and Hydrophobic Interaction in drug development. [3+2.5+2]