BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Pharm-2020/B.Pharm-2021/B.Pharm-2022

Course Name – Medicinal Chemistry III Theory

Course Code - BP601T

(Semester VI)

Full Marks : 75 **Time : 3:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 20=20

1. *Choose the correct alternative from the following :*

(i) Which of the following product is produced by alkali hydrolysis of penicillin?

a) Penicillenic acid b) Penillic acid
c) Penicilloic acid d) Penilloic acid

(ii) Which of the beta-lactam ring system fused with clavulanic acid?

a) Oxazole system b) Thiadiazole system
c) Oxazolidine system d) Thiazolidine system

(iii) Which of the antibiotic bind to the 50S subunit of ribosome thereby inhibiting protein synthesis except

a) Chloramphenicol b) Erythromycin
c) Linezolid d) Doxycycline

(iv) Select the answer- an electron-withdrawing substituent on the alpha carbon of the side chain of penicillin provides

a) Beta lactamase resistance b) Acid resistance
c) Penicillinase resistance d) Both (a) and (b)

(v) Which of the cephalosporin with the highest activity against gram-positive cocci?

a) Ceftazidime b) Cephalothin
c) Cefotaxime, d) Cefaclor

(vi) Find among the following that are considered to be bacteriostatic.

a) Penicillin b) Chloramphenicol
c) Ciprofloxacin d) Cefoxitin

(vii) Which of the correct position of carbon of penicillin where carboxylic acid group placed

a) C-3 b) C-2
c) C-6 d) C-7

(viii) Select the option-Demeclocycline differs from chlortetracycline only by _____.

a) absence of – CH3 group on carbon 6 b) presence of – OH group on carbon 6

c) absence of – N (CH3)2 group on carbon 4 d) absence of – OH group on carbon 3

(ix) Select the antibiotic that is mainly used for typhoid fever.

a) Ampicillin b) Gentamycin
c) Chloramphenicol d) Rifampicin

(x) Recall the semi synthetic penicillin is active against penicillinase _____.

a) ampicillin b) cloxacillin
c) amoxicillin d) penicine V

(xi) The full form of 6-APA is represent as

a) 6-amino penicillanic-acid b) 6-amino penicilloic-acid
c) 6-amino penicillanic anhydride d) 6-aceto penicillanic acid

(xii) Select the correct option, the anti-malarial drug quinine contains _____.

a) Quinoline ring b) Isoquinoline ring
c) Isoquinoline ring d) Both (a) and (b)

(xiii) Choose the correct statement about Clindamycin.

a) Inhibits bacterial cell wall synthesis, b) Is often used for prophylaxis of endocarditis in patients with Valvular disease who are undergoing dental procedures,
c) Penetrates through BBB into CSF well, d) Works well against enterococci and gram negative aerobic organisms,

(xiv) Esterification of –OH group in a drug may lead to

a) Destabilization, b) Degradation,
c) Prodrug formation, d) Epimerization,

(xv) Select the correct starting material for the synthesis of chloroquine

a) p-chloro aniline b) m-chloro aniline
c) o-chloro aniline d) aniline

(xvi) In acid degradation of erythromycin the first obtained intermediate is

a) Spiroketal, b) Hemiketal,
c) Desosamine, d) Cladinose,

(xvii) The mode of action of biguanides can be explained as

a) Cross linking inhibition, b) dihydrofolate reductase inhibition,
c) Protein synthesis inhibition, d) Microtubule damaging,

(xviii) Kaposis's Sarcoma is associated with

a) Diabetes, b) AIDS,
c) Tuberculosis, d) Ulcer,

(xix) Select the correct option for the use of amantadine is

a) anti-viral drug, b) anthelmintic drug,
c) antiprotozoal drug, d) antibacterial drug.,

(xx) The antiviral drug which is a analogue of thiazole

a) Nelfinavir, b) Ritonovir,
c) Saquinavir, d) Loviride,

Group-B

(Short Answer Type Questions) 5 x 7=35

2. Describe the mechanism of action with a schematic representation of penicillin. (5)

3. Express about the bioprecaursor and discuss with suitable example. (5)

4. Define antibiotic and classify them. (5)
5. Describe the chemical structure, nomenclature and therapeutic applications of tetracyclin. (5)

6. Write a short note on structure based drug design. (5)
7. Illustrate on pharmacophore modeling and docking techniques. (5)

OR

Explain the SAR of quinolones. (5)

8. Analyze the synthesis of ciprofloxacin as UTI. (5)

OR

Explain the structure and mechanism of action of ethionamide, ethambutol, para amino salicylic acid. (5)

Group-C

(Long Answer Type Questions) 10 x 2=20

9. Discuss the steps involved in the chemical synthesis of mebendazole and explain the dose and therapeutic applications. (10)

10. Analyze in detail the stepwise degradation of cephalosporins. (10)

OR

Enumerate the structure and explain in details chemical srtucture wih IUPAC names of amphotericin B and miconazole with mechanism of action. (10)

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