



BRAINWARE UNIVERSITY

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Pharmaceutical Technology
Brainware University
Bansat, Kolkata 700125

Term End Examination 2023-2024

Programme – B.Pharm-2019/B.Pharm-2020/B.Pharm-2021

Course Name – Medicinal Chemistry III/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) Choose the correct one- lipophilicity of tetracycline increases by esterification of – OH group at position
 - a) C – 5
 - b) C – 10
 - c) C – 6
 - d) C – 12
 - (ii) Select the correct one- benzylpenicillin is also known as
 - a) Penicillin- G
 - b) Penicillin- V
 - c) Penicillin- F
 - d) Penicillin- K
 - (iii) 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
 - (iv) Choose the right option-penicillins act by
 - a) inhibiting cell wall synthesis
 - b) inhibiting protein synthesis
 - c) binding with nucleic acids
 - d) inhibiting folic acid synthesis
 - (v) When-in cephalosporins, higher resistance to hydrolysis by beta lactamases is shown
 - a) The amino group is acylated
 - b) Replacement of sulphur with oxygen
 - c) Oxidation of ring sulphur to sulphoxide or sulphone
 - d) Introduction of C-7 α -methoxy group
 - (vi) Choose the ion with tetracycline is contraindicated with
 - a) iron
 - b) calcium containing antacid
 - c) magnesium containing drug
 - d) all
 - (vii) Select the antibiotic that is mainly used for typhoid fever.
 - a) Ampicillin
 - b) Gentamycin
 - c) Chloramphenicol
 - d) Rifampicin
 - (viii) Recall the semi synthetic penicillin is active against penicillinase
 - a) ampicillin,
 - b) cloxacillin,

- c) amoxicillin, d) penicillin V,
 (ix) Recall the answer, semi-synthetic penicillin described as bactericidal is
 a) oxacilline b) cloxacillin
 c) amoxicillin d) penicillin
 (x) Name the semi-synthetic penicillin that was considered in pseudomonas infection for the treatment is
 a) Oxacilline b) Ampicillin
 c) Amoxicillin d) Carbenicillin
 (xi) Choose the correct option-antibiotic that was reported to act against septicaemia
 a) oxacilline, b) gentamycin,
 c) amoxicillin, d) carbenicillin,
 (xii) 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
 (xiii) Select from the following, a central six-member ring of dihydrostreptomycin called
 a) 2-deoxy streptamine b) streptidine
 c) streptose d) streptamine
 (xiv) Tetracyclines are characterized by
 a) decahydronaphthacenes skeleton, b) heptahydronaphthacenes skeleton,
 c) tetrahydronaphthacenes skeleton, d) octahydronaphthacenes skeleton,
 (xv) Esterification of -OH group in a drug may lead to
 a) Destabilization, b) Degradation,
 c) Prodrug formation, d) Epimerization,
 (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) Kaposi's Sarcoma is associated with
 a) Diabetes, b) AIDS,
 c) Tuberculosis, d) Ulcer,
 (xix) Choose the correct statement about fluoroquinolones.
 a) Ciprofloxacin is ineffective in the treatment of gonococcus, b) Norfloxacin and Ciprofloxacin are predominantly faecally excreted,
 c) Norfloxacin and Ciprofloxacin have long half lives (12 hours), d) May damage growing cartilage in children less than 18 years of age,
 (xx) Choose the correct statement for rifampicin is
 a) Inhibits hepatic microsomal enzymes, b) Inhibits DNA synthesis,
 c) bactericidal for mycobacteria, d) not appreciably protein bound,

Group-B

(Short Answer Type Questions)

5 x 7=35

2. Explain the mechanism of action of trimethoprim. (5)
3. Discuss the pharmacological action of antitubercular antibiotics with example. (5)
4. Describe the nomenclature of penicillin using USP and CAS system and some of the semisynthetic penicillin with structural example. (5)

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5. Express the chemical structure, application and side effects of oxytetracycline and chlorotetracycline. (5)
6. Write in details about the structure-activity relationship study of sulphonamides. (5)
7. Analyze the synthesis of ciprofloxacin as UTI. (5)

OR

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

8. Explain the steps involve in the synthesis of sulphacetamide. (5)

OR

Establish the structure activity relationship study of antifungal antibiotics. (5)

Group-C

(Long Answer Type Questions)

10 x 2=20

9. Describe the chemistry of aminoglycosides antibiotics and describe the structure and mechanism of action for Neomycin and kanamycin (10)
10. Analyze the structure activity relationship of quinoline derivatives (10)

OR

Describe the SAR of aminoglycosides antibiotics and describe the structure and mechanism (10) of action for streptomycin and chlorotetracycline.

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