MEDICINAL CHEMISTRY 6TH SEM IMPORTANT QUESTIONS

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UNIT – I **10 Hours**

Antibiotics

Historical background, Nomenclature, Stereochemistry, Structure activity relationship, Chemical degradation classification and important products of the following classes.

β-Lactam antibiotics: Penicillin, Cepholosporins, β- Lactamase inhibitors, Monobactams

Aminoglycosides: Streptomycin, Neomycin, Kanamycin

Tetracyclines: Tetracycline,Oxytetracycline, Chlortetracycline, Minocycline, Doxycycline

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10 MARKS QUESTION

1. explain antibiotics, its classification and discuss the chemistry of penicillin in detail
2. Define antibiotics and discuss beta- lactom antibiotics in detail
3. SAR of tetracycline

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05 MARKS QUESTION

1. Discuss SAR of aminoglycosides
2. Discuss SAR of cephalosporin
3. Discuss SAR of penicillin

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4. Explain mechanism action of beta- lactom antibiotics
5. Write a short note on beta- lactomase inhibitor

02 MARKS QUESTION

1. Give any 2 examples of beta- lactomase inhibitor
2. Name any 2 drugs which come under tetracycline
3. Why benzyl penicillin is not orally administrative
4. Give two examples of amino penicillin

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UNIT – II

Antibiotics

Historical background, Nomenclature, Stereochemistry, Structure activity relationship, Chemical degradation classification and important products of the following classes.

Macrolide: Erythromycin Clarithromycin, Azithromycin.

Miscellaneous: Chloramphenicol*, Clindamycin.

Prodrugs: Basic concepts and application of prodrugs design.

Antimalarials: Etiology of malaria.

Quinolines: SAR, Quinine sulphate, Chloroquine*, Amodiaquine, Primaquine phosphate, Pamaquine*, Quinacrine hydrochloride, Mefloquine.

Biguanides and dihydro triazines: Cycloguanil pamoate, Proguanil.

Miscellaneous: Pyrimethamine, Artesunete, Artemether, Atovoquone.

10 MARKS QUESTION

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1. Classify anti-malarial drugs and write down the synthesis , mechanism of action and uses of chloroquine /pamaquine
2. Explain anti-malarial drugs and discuss the SAR of quinones

05 MARKS QUESTION

1. Explain prodrug and also discuss about basic concept and application of prodrug deign

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2. Discuss the mechanism of action of macrolides

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02 MARKS QUESTION

1. Explain macrolides
2. Explain prodrug
3. Write down the application of prodrug
4. Give any 2 examples of prodrug
5. Write down any 2 drug used in malarial treatment
6. Write down the synthesis of chloramphenicol
7. Synthesis of chloroquine
8. Synthesis of panaquine

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UNIT – III

Anti-tubercular Agents

Synthetic anti tubercular agents: Isoniozid*, Ethionamide, Ethambutol, Pyrazinamide, Para amino salicylic acid.*

Anti tubercular antibiotics: Rifampicin, Rifabutin, Cycloserine Streptomycine, Capreomycin sulphate.

Urinary tract anti-infective agents

Quinolones: SAR of quinolones, Nalidixic Acid,Norfloxacin, Enoxacin, Ciprofloxacin*, Ofloxacin, Lomefloxacin, Sparfloxacin, Gatifloxacin, Moxifloxacin

Miscellaneous: Furazolidine, Nitrofurantoin*, Methanamine.

Antiviral agents:

Amantadine hydrochloride, Rimantadine hydrochloride, Idoxuridine trifluoride, Acyclovir*, Gancyclovir, Zidovudine, Didanosine, Zalcitabine, Lamivudine, Loviride, Delavirding, Ribavirin, Saquinavir, Indinavir, Ritonavir.

10 MARKS QUESTION DEPTH OF BIOLOGY

1. Classify anti-viral agents with suitable examples . Give synthesis and uses of acyclovir
2. Write a short note on urinary tract , anti- infective agents and discuss the SAR of quinolones

05 MARKS QUESTION

1.Discuss the MOA of quinolones

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2. Give SAR and use of quinolones
3. Explain urinary tract anti- infective agents in detail
4. Classify anti- viral with suitable examples [MOA of reverse transcriptase inhibitor]

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5. Write short note on anti-tubercular agents and its classification

02 MARKS QUESTION

1. Synthesis and use of –

a. Isoniozid

b. Para amino salicylic acid

c. Nitrofurantoin

d. acyclovir

UNIT – IV

Antifungal agents:

Antifungal antibiotics: Amphotericin-B, Nystatin, Natamycin, Griseofulvin.

Synthetic Antifungal agents: Clotrimazole, Econazole, Butoconazole, Oxiconazole Tioconozole, Miconazole*, Ketoconazole, Terconazole, Itraconazole, Fluconazole, Naftifine hydrochloride, Tolnaftate*.

Anti-protozoal Agents: Metronidazole*, Tinidazole, Ornidazole, Diloxanide, Iodoquinol, Pentamidine Isethionate, Atovaquone, Eflornithine.

Anthelmintics: Diethylcarbamazine citrate*, Thiabendazole, Mebendazole*, Albendazole, Niclosamide, Oxamniquine, Praziquantal, Ivermectin.

Sulphonamides and Sulfones

Historical development, chemistry, classification and SAR of Sulfonamides: Sulphamethizole, Sulfisoxazole, Sulphamethizine, Sulfacetamide*, Sulphapyridine, Sulfamethoxaole*, Sulphadiazine, Mefenide acetate, Sulfasalazine.

Folate reductase inhibitors: Trimethoprim*, Cotrimoxazole.

Sulfones: Dapsone*.

10 MARKS QUESTION DEPTH OF BIOLOGY

1. Classify antifungal agents with suitable examples . Give synthesis and use of miconazole and ketoconazole
2. Discuss the classification and SAR of sulphonamides

05 MARKS QUESTION

1. Discuss the life cycle of E. histolytica [anti-protozoal agents] & classify anti amoebic agents
2. Classify anti fungal agents

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3. Write a short note on sulphonamides
4. Explain mechanism of action of folate reductase inhibitor & write synthesis of trimethoprim

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02 MARKS QUESTION

1. Synthesis and use of miconazole
2. Explain anti- helmentics
3. Synthesis and use of sulfacetamide
4. Synthesis and use of sulfamethoxazole
5. Explain folate reductase inhibitor with example
6. Synthesis and use of dopamine
7. Enlist the drug used as anti helmintic
8. Give 2 examples of anti- protozoal drugs

UNIT – V

Introduction to Drug Design

Various approaches used in drug design.

Physicochemical parameters used in quantitative structure activity relationship (QSAR) such as partition coefficient, Hammet's electronic parameter, Tafts steric parameter and Hansch analysis.

Pharmacophore modeling and docking techniques.

Combinatorial Chemistry: Concept and applications of combinatorial chemistry: solid phase and solution phase synthesis.

10 MARKS QUESTION DEPTH OF BIOLOGY

1. Discuss the various physiochemical parameters which are responsible for QSAR

05 MARKS QUESTION

1. Explain CADD [computed aided drug design] DEPTH OF BIOLOGY
2. Explain extra thermodynamic approach of QSAR analysis and its application
3. Discuss various application of combinatorial chemistry
4. Give a detail note on docking technique

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