Question Bank for unit 3

Long Essay Questions (10-15 Marks Each)

These require detailed explanations, including mechanisms, classifications, and clinical applications. Aim to include diagrams where relevant (e.g., bacterial cell wall synthesis inhibition).

1. Classify antibacterial drugs with suitable examples. Describe the mechanism of action, uses, and adverse effects of β-lactam antibiotics.
2. Enumerate the various classes of antifungal agents. Explain the mechanism of action and therapeutic uses of azole antifungals. Discuss their contraindications and drug interactions.
3. Describe the life cycle of Plasmodium and the role of antimalarial drugs in its interruption. Classify antimalarials and explain the mechanism of action of artemisinin derivatives.
4. Discuss the classification and mechanism of action of antiviral drugs. Elaborate on the uses and side effects of nucleoside reverse transcriptase inhibitors (NRTIs) in HIV treatment.
5. Explain the mechanism of action of sulfonamides and their therapeutic applications. Describe the adverse effects and resistance mechanisms associated with them.
6. Classify antitubercular drugs. Describe the mechanism of action, regimen, and monitoring parameters for first-line drugs like isoniazid and rifampicin.
7. Discuss the pharmacology of quinolones, including their mechanism of action, spectrum of activity, and common adverse effects. Explain their role in treating urinary tract infections.
8. Enumerate antiviral drugs used in herpes infections. Explain the mechanism of action of acyclovir and its prophylactic uses.
9. Describe the classification of antiamoebic drugs. Discuss the mechanism of action and uses of metronidazole in treating Entamoeba histolytica infections.
10. Explain the role of β-lactamase inhibitors in combination therapy. Describe the pharmacology of amoxicillin-clavulanate, including indications and side effects.

Short Essay Questions (5-8 Marks Each)

These focus on specific aspects like mechanisms, uses, or comparisons. Provide structured answers with examples.

1. Classify penicillins and explain the mechanism of action of penicillin G.
2. Describe the mechanism of action of tetracyclines and their uses in rickettsial infections.
3. Explain the pharmacology of aminoglycosides, including nephrotoxicity as an adverse effect.
4. Discuss the mechanism of action of polyene antifungals like amphotericin B and its clinical uses.
5. Enumerate the classes of antimalarial drugs. Describe the mechanism of action of chloroquine.
6. Explain the role of interferons in antiviral therapy and their mechanism of action.
7. Describe the mechanism of action of macrolides (e.g., erythromycin) and their indications in respiratory infections.
8. Discuss the adverse effects of fluoroquinolones and precautions in their use.
9. Explain the mechanism of action of azithromycin and its advantages over erythromycin.
10. Describe the pharmacology of linezolid, including its use in MRSA infections.
11. Classify cephalosporins and explain the generation-wise spectrum of activity.
12. Discuss the mechanism of action of griseofulvin and its uses in dermatophytosis.

13. Explain the role of primaquine in malaria treatment and its hemolytic adverse effects.
14. Describe the mechanism of action of oseltamivir in influenza treatment.
15. Enumerate the drugs used in leishmaniasis and explain the mechanism of sodium stibogluconate.

Short Answer Questions (2-5 Marks Each)

These are concise, often definition-based or list-oriented. Focus on key facts.

1. Define bacteriostatic and bactericidal drugs with examples.
2. What is the mechanism of action of vancomycin?
3. List four adverse effects of chloramphenicol.
4. Name two β-lactamase inhibitors and their uses.
5. Explain the mechanism of action of dapsone in leprosy.
6. What is the role of rifampicin in TB treatment? Mention one adverse effect.
7. Define superinfection and give an example.
8. List the classes of antiviral drugs targeting influenza.
9. What is the mechanism of action of nystatin?
10. Name two drugs used in the treatment of toxoplasmosis.
11. Explain resistance to sulfonamides.
12. What is the prophylactic use of acyclovir?
13. List the generations of cephalosporins with one example each.
14. Describe the mechanism of action of artemether.
15. What are the common side effects of amphotericin B?
16. Define MIC (Minimum Inhibitory Concentration) and its significance.
17. Name two antifungal drugs for systemic mycoses.
18. Explain the mechanism of action of zidovudine.
19. What is the role of pyrimethamine in malaria?
20. List four mechanisms of antibacterial drug resistance.

Multiple Choice Questions (MCQs) (1 Mark Each)

These are objective and test basic recall. Select the correct option.

1. Which of the following is a cell wall synthesis inhibitor? a) Tetracycline b) Penicillin c) Aminoglycoside d) Macrolide **Answer: b) Penicillin**
2. Amphotericin B acts by: a) Inhibiting ergosterol synthesis b) Binding to ergosterol in fungal membrane c) Inhibiting protein synthesis d) Inhibiting DNA gyrase **Answer: b) Binding to ergosterol in fungal membrane**
3. Chloroquine is used in the treatment of: a) Viral infections b) Fungal infections c) Malaria (blood schizonticide) d) Bacterial infections **Answer: c) Malaria (blood schizonticide)**
4. Which drug is a nucleoside analog used in HIV? a) Oseltamivir b) Acyclovir c) Lamivudine d) Ganciclovir **Answer: c) Lamivudine**
5. The most common adverse effect of streptomycin is: a) Ototoxicity b) Hepatotoxicity c) Nephrotoxicity d) Bone marrow suppression **Answer: a) Ototoxicity**
6. Azoles like fluconazole inhibit: a) Lanosterol 14α-demethylase b) Beta-glucan synthesis c) Squalene epoxidase d) Polyene binding **Answer: a) Lanosterol 14α-demethylase**

7. Primaquine acts on: a) Blood schizonts b) Liver hypnozoites c) Gametocytes d) Both b and c **Answer: d) Both b and c**
8. Which is not a fluoroquinolone? a) Ciprofloxacin b) Levofloxacin c) Erythromycin d) Moxifloxacin **Answer: c) Erythromycin**
9. Metronidazole is effective against: a) Anaerobic bacteria and protozoa b) Gram-positive cocci c) Fungi d) Viruses **Answer: a) Anaerobic bacteria and protozoa**
10. Rifampicin induces: a) CYP450 enzymes b) Inhibits CYP450 c) No effect on enzymes d) Only renal excretion **Answer: a) CYP450 enzymes**