Short and Long Questions:

Antimalarial drugs

1. Classify the Antimalarial drugs.
2. Explain briefly life cycle of malaria parasites.
3. List name of Fast acting and slow acting antimalarial drugs
4. What is ACT? Name the Artemisinin's derivates.
5. What is WHO recommended ACT therapy?
6. Write the MOA of Artemisinin.
7. Write the treatment for uncomplicated malaria.
8. Explain the treatment for severe complicated malaria.
9. Shortly explain prophylaxis of malaria treatment
10. Explain briefly life cycle of malaria parasites.

FluroQuinolones

11. What do you mean by Fluoroquinolones?
12. List the name 6 FluroQuinolones. Why they are so popular recently?
13. Explain why Fluoroquinolones should not be used in
    a. Subjects below 18 years b. Patients receiving Theophylline
    c. Patients with Warfarin d. With coadministration of NSAIDS
15. How FQ act? (MOA)
16. Write the clinical uses and Adverse effects of FQ.

Anti-tuberculosis drugs

1. Classify ATT drugs.
2. Write the flow chat of MOA of INH
3. Write the MOA of Rifampicin & Streptomycin
4. Write the MOA and adverse effects of Pyrazinamide
5. Explain the MOA and adverse effects of Ethambutol.
6. Mention the adverse effects of first line drugs.
7. What are DOTS and DOTS PLUS?
8. What do you know the MDR and XRD?
9. What is dose of First line drugs as per DOTS programme?
10. Explain briefly FDCs
11. Write the Treatment Regimens under NTEP for Cat I and Cat II.
12. Write the name of 2nd line drugs for IP and CP.

Anticancer drugs

1. Classify anticancer drugs.
2. How major six groups of anticancer drugs act?
3. What are the common adverse effects of anticancer drugs?
4. Mention 5 special toxicities of ACDs with examples?
5. What do you mean by cell-cycle specific (CCS) and cell-cycle nonspecific (CCNS) or proliferation independent drugs?
6. Cyclophosphamide – MOA and Treatment
7. Methotrexate -MoA and Treatment
8. Short notes on Taxane, Cyclophospamide and Mtx
9. Write the MOA and Adverse effects of vinca alkaloids.
10. Write the European 10-points code against cancer

Antifungal drugs

1. Write the MoA of Amphotericin B?
2. Classify the Antifungal drugs?
3. Write the Five clinical uses and Adverse effects of Amphotericin B.
4. Explain the MoA and its adverse effects of Griseofulvin
5. Classify the only Azoles group of drugs.
6. Write the MoA of Ketoconazole.
7. Mention the Five clinical uses and Adverse effects of Ketoconazole.

Long Questions: (Anticancer and Antimalarial drugs)

1. Explain the MOA of Alkylating agent drugs
2. Write the MOA of Platinum containing compounds.
3. Explain the MOA of Vinka alkaloids and its difference between VB/VC
4. Cyclophosphamide and Methotrexate – MoA and its treatments
5. Classify anticancer drugs and its Common Toxicity of Anticancer Drugs
6. Explain the briefly about MOA of CQ/ Quinine, Mefloquine, lumefontrine
7. Explain the MoA of Artimisinin group of drugs and its adverse effects.
8. Classify drugs acting on different stages of Malaria.

Fill in the blanks:

FQ

1. Ciprofloxacin is the ---------- (most potent first generation)
2. Norfloxacin is the ---------- (least potent) FQ.
3. Ciprofloxacin is---------- (rapidly absorbed orally), but food delays absorption
4. Pefloxacin attains ---------- (high CSF concentration), preferred for meningeal infections.
5. Levofloxacin has---------- (highest oral bioavailability)
6. Norfloxacin has least ---------- (oral bioavailability)
7. Sparfloxacin has ---------- (maximum plasma protein binding).
8. Pefloxacin has ---------- (highest first pass metabolism).
9. Spatfloxacin is the ----------(longest acting) of FQ
10. ---------- (Moxifloxacin) is the most potent FQ against tuberculosis
11. Highest incidence of phototoxicity is seen ---------- (lomefloxacin)

True and False:

1. Ciprofloxacin is the most potent first generation. -**T**
2. Norfloxacin is the least potent FQ. -**T**
3. Ciprofloxacin is rapidly absorbed orally, but food delays absorption -**T**
4. Pefloxacin attains high CSF concentration is used for meningeal infections. -**T**
5. Levofloxacin has highest oral bioavailability - **T**
6. Norfloxacin has least oral bioavailability - **T**
7. Sparfloxacin has maximum plasma protein binding. -**T**
8. Pefloxacin has highest first pass metabolism. -**T**
9. Spatfloxacin is the longest acting FQ -**T**
10. Moxifloxacin is the most potent FQ against tuberculosis - **T**

Antimalarial drugs:

1. Primary tissue schizonticides used for……. (Casual prophylaxis)
2. …… is a levorotatory alkaloid obtained from cinchona bark. (Quinine)
3. Gemtocidal drugs are used to…… (Reduce transmission)
4. IV infusion of quinine should be given in ……. To prevent hypoglycemia. (5% Dextrose)
5.Sporozoites of malarial parasites are present in …… of female Anopheles mosquito. (Salivary gland)
6…… are a fastest acting erythrocytic schizontocide. (Artimisinin derivatives).
7. In…….. merozoites reinfection of the liver. (Exoerythrocytic schizogony stage)
8. D- isomer quinidine is used as an……(Antiarrhythmic)
9. pre-erythrocytic schizogony occurs inside the …… of liver. (Parenchymal cells)
10. Artesunate ….....soluble and administrated by oral, IM and IV routes. (Water)
11. To completely eradicate the parasite from the patient's body radical curative.
12. To cutdown human-to-mosquito transmission ---------- (gametocidal)
13. pre-erythrocytic schizogony Occurs inside the parenchymal cells of -------- (liver).
14. ---------- (Merozoites) are liberated into blood.
15. The parasite multiplication during the erythrocytic phase is responsible for clinical attack is called ---------- (clinical cure).
16. Fast acting drugs are----------,----------,---------- (chloroquine, mefloquine, artemisinin)
17. Slow acting drugs are ----------,----------,---------- (pyrimethamine, proguanil, tetracyclines).
18. After erythrocytic schizogony, some merozoites develop into---------- (gametocytes).
19. gametocidal drugs are used to---------- (reduce transmission).
20. --------, --------, --------- (Headache, nausea, thrombocytopenia) are symptoms of malaria.

21. levorotatory alkaloid obtained from _____. (Cinchona bark).

22. Write two adverse effects of cinchonism _____ and _____. (Hypotension and cardiac arrhythmia)
23. Chloroquine is _____ drug. (Fast acting).
24. Malarial parasites infecting humans belong to _____ species of genus plasmodium. (four)
25. Proguanil and tetracycline are used for_____. (P.falciparum)
26. pyrimethamine is _____ drugs. (Slow acting)
27. _____ is the only drug which acts on exo-erythrocytic schizogony. (primaquine)
28. Malarial symptoms, incubation period is _____ days. (7-10)
29. Quinine is an erythrocytic schizontocide for _____. (All spices of plasmodium).
30. Sever malaria is caused by _____. (p. falciparum)
31. The ---------- is the infective form of malarial parasite. (sporozoite)

32. Plasmodia derive nutrition by digesting ---------- their acidic vacuoles. (Haemoglobinin)

33. ---------- is a safe drug for pregnancy. (chloroquine)

34. ---------- is the only drug which acts on Exo-erythrocytic schizogony. (Primaquine)

35. Sporozoites are present in the ---------- of female anopheles' mosquitoes. (Salivary gland)

36. Malaria caused by 4 species of the protozoal parasite ---------- (plasmodium)

37. Gametocidal drugs are used to ---------- (reduce transmission)

38. Dihydro-artemisinin (DHA) and 5. Arterolane are available for ---------- use only. (oral)

39. A large single dose or higher therapeutic doses of Quinine taken for a few days produce a syndrome called ---------- . (cinchonism)

40. Sporontocides are ---------- and ---------- (proguanil, pyrimethamine)

Antituberculosis drugs

1. Tuberculosis bacterial infection caused by ---------- (Mycobacterium Tuberculosis)

2. Anti-tuberculosis drugs include ---------- and---------- (first line, second line drugs).

3. First-line drugs include ----------, ---------- (isoniazid, rifampin)

4. Second line antituberculosis includes ----------, ---------- (ofloxacin and levofloxacin)

5. Multidrug resistance (MDR), is resistance to ---------- and ---------- (INH and rifampicin).

6. Drugs which will not pass BBB, ----------, ---------- (Ethambutol, Streptomycin).

7. Drugs cause hyperuricemia ----------, ---------- (Ethambutol, Pyrazinamide).

8. A drug that's contraindicated in pregnancy is ---------- (Streptomycin)

9. Treatment in DOTS given in Initial intensive phase with, ---------- (4–5 drugs) lasting ---------- (2–3 months).

10. Drug of choice for TB is ---------- (Isoniazid)

11. ---------- is a first line Antitubercular drug given as injection. (Streptomycin)
12. ---------- is a drug of choice for prophylaxis of Tuberculosis. (Isoniazid)
13. ---------- is the most important Antitubercular drug in intensive phase. (Isoniazid)
14. ---------- is a potent enzyme inducer so it is required to adjust the doses of various other drugs. (Rifampin)

15.---------- is weakly tuberculocidal and more active in acidic medium. (Pyrazinamide)
16. ---------- is effective only against intercellular bacilli while Streptomycin is effective only against Extracellular bacilli. (Pyrazinamide)
17. ---------- has good penetration in CSF, because of which it is highly useful in meningeal tuberculosis. (Pyrazinamide)
18. ---------- an Antitubercular drug may produce green vision. (Ethambutol)
19. ---------- an Antitubercular drug binds to ribosome 30s and 50s subunits, hence inhibit protein synthesis. (Streptomycin)
20. ---------- is the safest Antitubercular drug in renal failure. (Rifampin)
21. ---------- and---------- are not hepatotoxic among the first line drugs. (Ethambutol, Streptomycin)
22. ---------- is contraindicated in pregnancy because it is ototoxic to the fetus. (Streptomycin)

23. Streptomycin is ……. but less effective than INH or rifampin. (Tuberculocidal)
24. Ethambutol Inhibits synthesis of ……from galactose and arabinose. (Arabinogalactan)
25. ……. is weakly tuberculocidal and more active in acidic medium. (PYRAZINAMIDE)
26. …….. and ……do not cross blood brain briar. (Ethambutol and streptomycin)
27. …… safest drug during renal failure. (Rifampin)
28. ……is not hepatotoxic. (Ethambutol)
29. …….is not giving orally. (Streptomycin)
30. Rifampin crosses meninges, it is largely pumped out from CNS by ……. (P-glycoprotein).
31. Isoniazid is extensively metabolized in liver; most important pathway being ……. (N-acetylation by NAT2)
32. ……. catalyzes the formation of hydrocarbon chain. (Fatty acid synthetase1)
33. Tuberculosis is a chronic bacterial infection caused by ---------- (Mycobacterium tuberculosis)

34.---------- is bacteriostatic against resting and bactericidal against rapidly multiplying organisms. (Isoniazid)

35. Isoniazid is activated in the body by ---------- (catalase-peroxidase)

36. Pyrazinamide is converted inside the mycobacterial cell into an active metabolite called ---------- (pyrazinoic acid)

37. ---------- is required to form mycobacterial cell wall in combination with mycolic acid (Arabinogalactan)

38. ---------- binds to ribosomes 30S subunit, 50 subunit, 30S-50S interface. (Streptomycin)

39. ---------- catalyzes the formation of hydrocarbon chains (Fatty acid synthetase1 (FAS1)

40. The primary mechanism of action of INH is inhibition of synthesis of ---------- (mycolic acids)

41. ---------- gene codes DNA-dependent RNA polymerase (rpoB)

42. ---------- is weakly tuberculocidal and more active in acidic medium (Pyrazinamide)

Anticancer drugs:

1. S phase ---------- (DNA synthesis) takes place.
2. M phase ---------- takes place (Mitotic cell division)
3. Cell cycle-specific drugs are ----------, ---------- (Paclitaxel Methotrexate and VB/VC
4. Cell cycle non-specific drugs are ----------, ---------- (Cyclophosphamide, busulphan, Doxorubicin, Cisplatin)
5. Pyrimidine antagonists are ----------, ---------- (5-Fluorouracil (5-FU), cytarabine)
6. Antibiotics antitumor drugs are ----------, ---------- (Actinomycin D, bleomycin, mitomycin)
7. Camptothecins group of drugs are ----------, ----------(Topotecan, irinotecan).
8. Taxanes are ----------, ---------- (Paclitaxel, docetaxel)
9. Vinca alkaloids are ----------, ---------- (Vinblastine, vincristine)
10. IV Mesna is ---------- (2-mercapto-ethane-sulphonate)
11. Mesna is also excreted in---------- (urine)
12. Mesna inactivates acrolein, thus preventing ---------- (haemorrhagic cystitis)
13. Cisplatin is highly effective in the treatment of ----------, ---------- (testicular, ovarian, endometrial and bladder cancer)
14. Cisplatin used in ---------- (lung and oesophageal cancer)
15. The toxic effects of methotrexate on normal cells can be minimized by giving ---------- (Folinic acid)
16. ---------- and ----------are derived from the periwinkle plant (Vinblastine and vincristine)
17. ---------- derived from the bark of the Western yew tree (Paclitaxel)
18. Pulmonary fibrosis and pigmentation of skin causes by ----------, ---------- (busulphan and bleomycin).
19. Cardiotoxicity of anticancer drug---------- (doxorubicin and daunorubicin).
20. Pulmonary Fibrosis causes by ---------- (Methotrexate)

True or False

Antituberculosis drugs

1. Initial intensive phase with 4–5 drugs lasting 2–3 months/ **T**

2. Continuation phase with 2–3 drugs lasting 4–5 months/ **T**

3. Six months (2HRZE + 4HR) is treatment given to all patients with tuberculosis. **/F**

4. Full course should be given to the mother**. /T**

5. Hypersensitivity to ATT, steroids are given. **/ T**

6. In meningeal TB, prednisolone is used. **/ F**

7. In all other indications, dexamethasone is used. **/ F**

8. It's a chronic bacterial infection caused by, Mycobacterium Tuberculosis. **/T**

9. First-line drugs include, isoniazid, rifampin. **/ T**

10. Drugs which will not pass BBB, Pyrazinamide. **/F**

11. Streptomycin is a first line antitubercular drug which is given orally. (**F**: given by injection)

12. Isoniazid is the drug of choice for prophylaxis of tuberculosis. **(T)**

13. Isoniazid is metabolized in liver to an active deacylated metabolite which is excreted mainly in bile. (**F:** it is Rifampin)

14. Urine and secretions may become orange-red while taking rifampin. **(T)**

15. Ethambutol is the most hepatotoxic Antitubercula drug. (**F**: it is Pyrazinamide)

16. Pyrazinamide is effective only against intracellular bacteria. **(T)**

17. Ethambutol resistance is commonly associated with mutation in embB gene. **(T)**

18. In tuberculosis %90 bacilli are Extracellular. **(F**: mostly are intracellular)

19. Streptomycin is safe during pregnancy **(F**: not safe)

20.Multi drug resistance (MDR) is defined as resistance to isoniazid and rifampin with or without resistance to other drugs. **(T)**

21. INH is bacteriostatic against resting and bactericidal against rapidly multiplying organisms. **T**

22. Ethambutol Acts only on extracellular bacilli. **F**

23. Rifampin is bactericidal at low pH so well effective against intracellular organisms residing in macrophages. **F**

24. Pyrazinamide is converted inside the mycobacterial cell into an active metabolite pyrazinoicacid by an enzyme (pyrazinamidase) encoded by the pncA gene. **T**

25. Isoniazid is First antitubercular drug. **T**

26. Ethambutol decreases blood urate because of decrease renal excretion, in about 50% patients. **F**

27. Ethambutol accumulates in renal failure, and the dose should be reduced by half if creatinine clearance is less than 10 mL/min. **T**

28. Ethambutol is one of the least toxic (no hepatotoxic) anti-butercular drug **T**

29. Second line drugs have either low antitubercular efficacy or higher toxicity or both **T**

30. Anti-tubercular drug which makes the patient non-infectious earliest is INH. **T**

31. Mycolic acid is an along, complex, branched fatty acid formed by long hydrocarbon chain which are synthesized from acetyl Co-A**. T**

32. First line anti- tuberculosis drug are low efficacy and high toxicity. **F** (VICE VERSA)

33. Isoniazid widely distributed in body and has maximum CSF penetration. **T**

34. Green vision is one of adverse effect of streptomycin. **F**(ethambutol)

35. Due to mutation in kat-G high level of resistance develop. **T**

36. Isoniazid is broad spectrum active against streptococci, staphylococci, h.influenza , mycobacterium tuberculosis. **F** (RIFAMPIN)

37. Pyrazinamide is weakly tuberculoidal and more active in acidic medium. **T**

38. Streptomycin s MOA is 30-50s protein synthetase inhibitor. **T**

39. Pyrazinamide-Z decrease urate excretion. **T**

40. streptomycin effective only against intracellular bacteria**. F** (EXTRA ALKALINE PH)

41. Streptomycin is the most potent sterilizing antitubercular drug. T/F **(False)**

42. Ethambutol and streptomycin cross the blood brain barrier. T/F **(False)**

43. Combination of doxycycline and rifampin is the first line therapy of brucellosis. T/F (True)

44. Ethambutol is most hepatotoxic antitubercular drug. T/F (False)

45. Ethambutol and pyrazinamide can cause hyperuricemia T/F (True)

46. Streptomycin has poor penetration in cells so cannot kill the intracellular organism. T/F (True)

47. Isoniazid is only effective against intracellular mycobacteria. T/F (False)

48. Rifampicin is effective against both extra-and intracellular organisms. T/F (True)

49. Pyrazinamide penetrates meninges incompletely and is temporarily stored in RBCs. T/F (False)
50. Streptomycin is contraindicated in pregnancy. T/F (True)

Antimalarial drugs

1. Primaquine in gemtogony stage used for P. vivax. - **F**
2. Sporontocides are pyrimethamine and primaquine. - **F**
3. Exoerythrocytic schizogony is absent in P. ovale. - **F**
4. Chloroquine is active against Rheumatoid arthritis. - **T**
5. Artimisinin derivatives safe in pregnancy. - **F**
6. Gemtocidal drugs are no benefit to patient being treated. - **T**
7. Only primaquine used for exo-erythrocytic schizogony. - **T**
8. Artemether is administrated by orally, IM and IV rout. - **F**
9. Cinchonism and black water fever are an adverse effect of quinine. - **F**
10. Man is a definitive host of malarial parasites. - **F**
11. Artimisnin should be avoided in pregnancy if possible because teratogenicity has been seen in animal study. **True**
12. Gametocidal drugs are used for prophylaxis. **False**
13. prolonged use of high dose of chloroquine cause visual loss due to retinal damage. **True**
14. The malarial parasites pass their life cycle in two hosts. **True**
15. chloroquine, has effect on primary and secondary hepatic stages of parasite. **False**
16. Drugs acting on Exoerythrocytic schizogony prevent relapse and are used for radical cure. **True**
17. Artesunate can be administered by oral, I.M, or I.V routes. **True**
18. Pre-erythrocytic schizogony occurs inside the parenchymal cells of liver. **True**
19. Quinine will cause toxicity at higher concentration in patients with malaria because of binding to alpha-1 acid glycoprotein which is raised during infection. **Fals**e
20. Complicated malaria caused by P.falciparum. **True**
21. Artesunate its sodium salt is water-soluble and is administered by oral, i.m.or i.v.routes **T**
22. Malaria, caused by 4 species of the protozoal parasite Plasmodium **T**
23. Malarial parasites infecting humans belong to four species of Genus mycobacterium **F**
24. The malarial parasites pass their life cycle in three hosts **F**
25. The sporozoite is the infective form of the malarial parasite. **T**
26. These sporozoites are present in the salivary gland of male F Pre-erythrocytic schizogony Occurs inside the parenchymal cells of liver. **T**
27. Merozoites, liberated from pre-erythrocytic schizogony, infect WBC **F**
28. The parasite multiplication during the erythrocytic phase is not responsible for clinical attack **F**
29. Fast acting →Chloroquine, amadioquine **T**
30. Slow acting →Pyrimethamine, proguanil, sulfonamides, tetracyclines. **T**
31. Arteether drug developed in India is available for i.m. administration only to adults for complicated malaria. **T**

32. Exoerythrocytic schizogony is absent in P. falciparum, so it does not require radical cure. True
33. Primary tissue schizonticides - for preventing relapse. False
34. Secondary tissue schizonticides - for casual prophylaxis. False
35. Gametocytocides - destroy gametocytes. true
36. Sporontocides prevent the development of oocysts in the mosquito. true
37. Gametocides are proguanil and pyrimethamine. False
38. Chloroquine is a rapidly acting erythrocytic schizontocide against all species of plasmodia. true
39. Plasmodia derive nutrition by digesting haemoglobinin their acidic vacuoles. true
40. Mefloquine is levorotatory alkaloid obtained from cinchona bark. false
41. Quinine is a d-isomer quinidine is used as an antiarrhythmic. True
42. Malaria caused by 2 species of the protozoal parasite plasmodium. (F)
43. pre-erythrocytic schizogony occurs inside the parenchymal calls of liver. (T)
44. Primaquine is used for falciparum. (F)
45. Merozoites, liberated from pre- erythrocytic schizogony infect WBC. (F)
46. Chloroquine is slow acting. (F)
47. Malaria parasites pass their lifecycle in one host. (F)
48. Proguanil is slow acting drug. (T)
49. Gametocidal drugs are used to reduce transmission. (T)
50. Chloroquine & quinine is used for p. vivax. (T)
51. Chloroquine is the only drug which acts on exo-erythrocytic schizogony. (F)