**KMTC NYERI CAMPUS NURSING DEPARTMENT**

**PHARMACOLOGY CAT 1: ATTEMPT ALL QUESTIONS 40MKS**

**1. Local anesthetics produce:**

**a) Analgesia, amnesia, loss of consciousness**

**b) Blocking pain sensation without loss of consciousness**

**c) Alleviation of anxiety and pain with an altered level of consciousness**

**d) A stupor or somnolent state**

**2. Parasympathomimetic drugs cause:**

**a) Bronchodilation**

**b) Mydriasis**

**c) Bradycardia**

**d) Constipation**

**3. Select a hypnotic drug, which is a benzodiazepine derivative:**

**a) Zolpidem**

**b) Flurazepam**

**c) Secobarbital**

**d) Phenobarbitone**

**4. Which of the following barbiturates is an ultra-short-acting drug?**

**a) Secobarbital**

**b) Amobarbital**

**c) Thiopental**

**d) Phenobarbital**

**5. Which of the following antiseizure drugs produces enhancement of GABA-mediated inhibition?**

**a) Ethosuximide**

**b) Carbamazepine**

**c) Phenobarbital**

**d) Lamotrigine**

**6. The most effective drug for stopping generalized tonic-clonic status epilepticus in adults is:**

**a) Lamotrigine**

**b) Ethosuximide**

**c) Diazepam**

**d) Zonisamide**

**7. Which of the following agents is a full antagonist of opioid receptors?**

**a) Meperidine**

**b) Buprenorphine**

**c) Naloxone**

**d) Butorphanol**

**8. Which of the following non-narcotic agents is salicylic acid derivative?**

**a) Phenylbutazone**

**b) Ketamine**

**c) Aspirin**

**d) Tramadol**

**9. Which one of the following non-narcotic agents inhibits mainly cyclooxygenase (COX) in CNS?**

**a) Paracetamol**

**b) Ketorolac**

**c) Acetylsalicylic acid**

**d) Ibuprofen**

**10. Indicate the non-narcotic analgesic, which lacks an anti-inflammatory effect:**

**a) Naloxone**

**b) Paracetamol**

**c) Metamizole**

**d) Aspirin**

**11. Which of the following agents is related to tricyclic antidepressants?**

**a) Nefazodon**

**b) Amitriptyline**

**c) Fluoxetine**

**d) Isocarboxazid**

**12. Which of the following antidepressants is a selective serotonin reuptake inhibitor?**

**a) Phenelzine**

**b) Desipramine**

**c) Maprotiline**

**d) Fluoxetine**

**13. The mechanism of methylxanthines action is:**

**a) Inhibition of the enzyme phosphodiesterase**

**b) Beta2 -adrenoreceptor stimulation**

**c) Inhibition of the production of inflammatory cytokines**

**d) Inhibition of M-cholinoreceptors**

**14. Indicate the side effect of Theophylline:**

**a) Bradycardia**

**b) Increased myocardial demands for oxygen**

**c) Depression of respiratory centre**

**d) Elevation of the arterial blood pressure**

**15. Indicate the drug belonging to proton pump inhibitors:**

**a) Pirenzepine**

**b) Ranitidine**

**c) Omeprazole**

**d) Trimethaphan**

**16. Choose the drug which is a H2-receptor antagonist:**

**a) Omeprazole**

**b) Pirenzepine**

**c) Carbenoxolone**

**d) Ranitidine**

**17. Which of the following drugs may cause reversible gynecomastia?**

**a) Omeprazole**

**b) Pirenzepine**

**c) Cimetidine**

**d) Sucralfate**

**18. Which drug is an analog of prostaglandin E1?**

**a) Misoprostol**

**b) De-nol**

**c) Sucralfate**

**d) Omeprazole**

**19. Pick out the drug belonging to anticoagulants of direct action:**

**a) Aspirin**

**b) Heparin**

**c) Dicumarol**

**d) Phenprocoumon**

**20. Mechanism of aspirin action is:**

**a) Converts inactive plasminogen into active plasmin**

**b) Inhibits COX and thus thromboxane synthesis**

**c) Enhances the interaction between antitrombin III and both thrombin and the factors involved in the intrinsic clotting**

**cascade**

**d) Inhibits the glycoprotein IIb/IIIa complex**

**21. Tick the drug with nonselective beta-adrenoblocking activity:**

**a) Atenolol**

**b) Propranolol**

**c) Metoprolol**

**d) Nebivolol**

**22. The reason of beta-blockers administration for hypertension treatment is:**

**a) Peripheral vasodilatation**

**b) Diminishing of blood volume**

**c) Decreasing of heart work**

**d) Depression of vasomotor center**

**23. The reason of diuretics administration for hypertension treatment is:**

**a) Block the adrenergic transmission**

**b) Diminishing of blood volume and amount of Na+ ions in the vessels endothelium**

**c) Depression of rennin-angiotensin-aldosterone system**

**d) Depression of the vasomotor center**

**24. Tick the positive inotropic drug of glycoside structure:**

**a) Dopamine**

**b) Digoxin**

**c) Dobutamine**

**d) Adrenalin**

**25. The action of insulin is potentiated by:**

**a) Sulphonylureas**

**b) Glucagon**

**c) Biguanides**

**d) None of the above**

**26. What does the term “antibiotics” mean:**

**a) Non-organic or synthetic substances that selectively kill or inhibit the growth of other microorganisms**

**b) Substances produced by some microorganisms and their synthetic analogues that selectively kill or inhibit**

**the growth of another microorganisms**

**c) Substances produced by some microorganisms and their synthetic analogues that inhibit the growth of organism cells**

**d) Synthetic analogues of natural substances that kill protozoa and helminthes**

**27. Bactericidal effect is:**

**a) Inhibition of bacterial cell division**

**b) Inhibition of young bacterial cell growth**

**c) Destroying of bacterial cells**

**d) Formation of bacterial L-form**

**28. Which of the following groups of antibiotics demonstrates a bactericidal effect?**

**a) Tetracyclines**

**b) Macrolides**

**c) Penicillins**

**d) All of the above**

**29. Bacteristatic effect is:**

**a) Inhibition of bacterial cell division**

**b) Inhibition of young bacterial cells growth**

**c) Destroying of bacterial cells**

**d) Formation of bacterial L-form**

**30. Which of the following antibiotics contains a beta-lactam ring in their chemical structure :**

**a) Penicillins**

**b) Cephalosporins**

**c) Carbapenems and monobactams**

**d) All groups**

**31. Tick the drug belonging to antibiotics-macrolides:**

**a) Neomycin**

**b) Doxycycline**

**c) Erythromycin**

**d) Cefotaxime**

**32. Tick the drug belonging to antibiotics-tetracyclines:**

**a) Doxycycline**

**b) Streptomycin**

**c) Clarithromycin**

**d) Amoxacillin**

**33. All of antibiotics are aminoglycosides, EXCEPT:**

**a) Gentamycin**

**b) Streptomycin**

**c) Clindamycin**

**d) Neomycin**

**34. Antibiotics inhibiting the bacterial cell wall synthesis are:**

**a) Beta-lactam antibiotics**

**b) Tetracyclines**

**c) Aminoglycosides**

**d) Macrolides**

**35. Antibiotic inhibiting bacterial RNA synthesis is:**

**a) Erythromycin**

**b) Rifampin**

**c) Chloramphenicol**

**d) Imipinem**

**36. Which of the following drugs is used for systemic and deep mycotic infections treatment:**

**a) Co-trimoxazol**

**b) Griseofulvin**

**c) Amphotericin B**

**d) Nitrofungin**

**37. Which of the following drugs is used for dermatomycosis treatment:**

**a) Nystatin**

**b) Griseofulvin**

**c) Amphotericin B**

**d) Vancomycin**

**38. Azoles have an antifungal effect because of:**

**a) Inhibition of cell wall synthesis**

**b) Inhibition of fungal protein synthesis**

**c) Reduction of ergosterol synthesis**

**d) Inhibition of DNA synthesis**

**39. Which of the following drugs alters permeability of Candida cell membranes:**

**a) Amphotericin B**

**b) Ketoconazole**

**c) Nystatin**

**d) Terbinafine**

**40. Combination of sulfonamides with trimethoprim:**

**a) Decreases the unwanted effects of sulfonamides**

**b) Increases the antimicrobial activity**

**c) Decreases the antimicrobial activity**

**d) Increases the elimination of sulfonamides**

**41. Tick the antimycobacterial drug belonging to first-line agents:**

**a) PAS**

**b) Isoniazid**

**c) Kanamycin**

**d) Pyrazinamide**

**42. Combined chemotherapy of tuberculosis is used to:**

**a) Decrease mycobacterium drug-resistance**

**b) Increase mycobacterium drug-resistance**

**c) Decrease the antimicrobal activity**

**d) Decrease the onset of antimycobacterial drugs biotransformation:**

**43. Fluoroquinolones are active against:**

**a) Gram negative microorganisms only**

**b) Mycoplasmas and Chlamidiae only**

**c) Gram positive microorganisms only**

**d) Variety of Gram-negative and positive microorganisms, including Mycoplasmas and Chlamidiae**

**44. Tick the drug used for malaria chemoprophylaxis and treatment:**

**a) Chloroquine**

**b) Quinidine**

**c) Quinine**

**d) Sulfonamides**

**45. Tick the drug used for leishmaniasis treatment:**

**a) Pyrimethamine**

**b) Albendazole**

**c) Sodium stibogluconate**

**d) Tinidazole**

**46. Tick the drug, inhibiting viral reverse transcriptase:**

**a) Zidovudine**

**b) Vidarabine**

**c) Rimantadine**

**d) Gancyclovir**

**47. Tick the drug which belongs to nonnucleoside reverse transcriptase inhibitors:**

**a) Zidovudine**

**b) Vidarabine**

**c) Nevirapine**

**d) Gancyclovir**

1. **One of the following drugs may be prescribed in a patient with gastroparesis**
2. **Domperidone**
3. **Omeprazole**
4. **Cimetidine**
5. **Ondanstron**
6. **The key manifestation of paracetamol overdose is**
7. **Neurotoxicity**
8. **Nephrotoxicity**
9. **Hepatotoxicity**
10. **Hypersensitivity**
11. **Compared to others, which NSAIDs has greater analgesic potency**
12. **Indomethacin**
13. **Ketorolac**
14. **Ibuprofen**
15. **Piroxicam**
16. **A patient has presented to the emergency department with an overdose of morphine. Which of the following drugs should be administered as an antidote**
17. **Flumazenil**
18. **Methadone**
19. **Naloxone**
20. **Nalbuphine**
21. **Tranexamic acid is one of the drugs that may be administered in acutely bleeding patients. This drug works by;**
22. **Competitively inhibiting plasminogen activation**
23. **Competitively inhibiting Vitamin K reduction**
24. **Activation of platelets aggregation**
25. **Activation of thrombin**
26. **A 50 year old male patient with chronic gout has been prescribed probenecid. The therapeutic effect of this drug is mediated through**
27. **Decreased production of uric acid**
28. **Reduction of inflammation**
29. **Increased excreation of uric acid**
30. **Inhibition of prostaglandin synthesis**
31. **One of the following is a narrow spectrum penicillinase susceptible penicillin;**
32. **Benzylpenicillin**
33. **Ampicillin**
34. **Cloxacillin**
35. **Amoxicillin**
36. **A patient has been diagnosed of salmonella typhi infection (typhoid fever). Which of the following drugs can be prescribed for this patient?**
37. **Ciprofloxacin**
38. **Gentamicin**
39. **Amikacin**
40. **Tetracycline**
41. **The excretory capacity of the body for a given drug is estimated by;**
42. **Half life**
43. **Clearance**
44. **Bioavailability**
45. **Volume of distribution**
46. **A 35 year old male patient in intensive care unit has been diagonised of hospital acquired pneumonia. On culture of the sputum, the bacteria pseudomonas aeruginosa was isolated. Which of the following drugs is indicated in this case?**
47. **Piperacillin**
48. **Amoxicillin**
49. **Vancomycin**
50. **Flucloxacillin**
51. **Amoxicillin-Clavulanic acid is a drug combination used in the treatment of a number of common bacterial infections. The role clavulanic acid in this combination is;**
52. **To act on gram negative cocci**
53. **To inhibit beta lactamase enzyme produced by some bacteria**
54. **To bind to toxins produced by some bacteria**
55. **To act on gram positive bacilli**
56. **A 30 year old female is diagonised with a urogenital infection. The cultures done on a sample of her vaginal discharge revealed presence of chlamydial trachomatis. Which of the following antibacterial agents would be appropriate to prescribe for the patient?**
57. **Doxycycline**
58. **Gentamicin**
59. **Flucloxacillin**
60. **Benzathine penicillin**
61. **A 4 year old child has recently developed brownish discoloration of teeth. Upon taking history, it is suspected that this occurrence may be a manifestation of an adverse effect from the use of an antibacterial agent that the child had been put on the treatment of an infection earlier. Which of the following antibacterial agents would you suspect that the child had used?**
62. **Tetracycline**
63. **Azithromycin**
64. **Amikacin**
65. **Chloromphenicol**
66. **A 9 year old schoolgirl has been diagonised with taeniasis. The drug of choice in this case would be;**
67. **Ivemectin**
68. **Praziquantel**
69. **Diethylcarbamazine**
70. **Albendazole**
71. **One of the following drugs is indicated in patients with hypolalemia as a result of prolonged therapy with loop diuretics;**
72. **Spironolactone**
73. **Hydrochlorothiazide**
74. **Furosemide**
75. **Chlorthalidone**
76. **Which one of the following drugs ia a gonaditropin releasing hormone agonist?**
77. **Leuprolide**
78. **Ganirelix**
79. **Tamoxifen**
80. **Bromocriptine**
81. **Explain why sildenafil and isosorbide dinitrates should not be administered concurrently to a patient suffering from Angina (4mks)**
82. **Why it is advisable to administer quinine with dextrose 5% to client infected malaria? (2mks)**
83. **Explain 3 ways antibacterial resistance can be prevented 4mks**
84. **Explain the following terms 6mks**
85. **Chemotherapy**
86. **Bacteriaostatic**
87. **First-pass effect**
88. **For each of the following drugs, state the class, mechanism of action and one clinical indication**
89. **Azithromycin 4mks**
90. **Enalapril 4mks**
91. **Insulin 4mks**
92. **Digoxin 4mks**

**TUMUTUMU D20 PHARMACOLGY CAT 09TH JANUARY 2017**

**Instructions: attempt all questions**

**Section I: MCQs (18mks)**

1. **A patient needs to take 0.75 g tetracycline PO. The drug comes in 250-mg tablets. How many tablets should the patient take?**

**a. 2 tablets**

**b. 3 tablets**

**c. 4 tablets**

**d. 30 tablets**

1. **An order is written for 700 mg ampicillin PO. The drug is supplied in liquid form as 1 g/3.5 mL. How much of the liquid should be given?**

**a. 5 mL**

**b. 2.5 mL**

**c. 6.2 mL**

**d. 2.45 mL**

1. **Digoxin 0.125 mg is ordered for a patient who is having trouble swallowing. The bottle of digoxin elixir reads 0.5 mg/2 mL. How much would you give?**

**a. 5 mL**

**b. 0.5 mL**

**c. 1.5 mL**

**d. 1 Ml**

1. **Which one of the following statements about the management of patients with GI ulcers**

**is accurate?**

**A. Overall, H2 receptor blockers are as effective as proton pump inhibitors.**

**B. Antimicrobial regimens that eradicate *Helicobacter pylori* are >98% effective in GI**

**ulcers.**

**C. Omeprazole is effective because it activates PGEl receptors.**

**D. Sucralfate polymerizes in the gut, forming a protective coat over ulcer beds.**

1. **Which of the following drugs is penicillinase resistant:**

**a) Oxacillin**

**b) Amoxacillin**

**c) Bicillin-5**

**d) Penicillin G**

1. **Mechanism of aspirin action is:**

**a) Converts inactive plasminogen into active plasmin**

**b) Inhibits COX and thus thromboxane synthesis**

**c) Enhances the interaction between antitrombin III and both thrombin and the factors involved in the intrinsic clotting**

**cascade**

**d) Inhibits the glycoprotein IIb/IIIa complex**

**7. Inhaled anesthetics and intravenous agents having general anesthetic properties:**

**a) Directly activate GABAA receptors**

**b) Facilitate GABA action but have no direct action on GABAA receptors**

**c) Reduce the excitatory glutamatergic neurotransmission**

**d) Increase the duration of opening of nicotine-activated potassium channels**

**8. Indicate the intravenous anesthetic, which is an ultra-short-acting barbiturate:**

**a) Fentanyl**

**b) Thiopental**

**c) Midazolam**

**d) Ketamine**

**9. The drug acts in the distal convoluted tubule:**

**a) Loop diuretics**

**b) Thiazide diuretics**

**c) Potassium-sparing diuretics**

**d) Carbonic anhydrase inhibitors**

**10. Methanol causes blindness due to its  
a) Hypersensitivity reactions  
b) Conjugated products  
c) Idiosyncratic reaction  
d) Oxidative products**

**11. What is the reason of complicated penetration of some drugs through brain-blood barrier?**

**a) High lipid solubility of a drug**

**b) Meningitis**

**c) Absence of pores in the brain capillary endothelium**

**d) High endocytosis degree in a brain capillary**

**12. The Combination of amoxycillin + clavulanic acid is used because  
a) It broadens the spectrum of amoxycillin  
b) It decreases the side effect of amoxycillin  
c) It decreases the toxicity of clavulanic acid  
d) It increases the oral bio availability of amoxicillin**

**13. An antagonist is a substance that:**

**a) Binds to the receptors and initiates changes in cell function, producing maximal effect**

**b) Binds to the receptors and initiates changes in cell function, producing submaximal effect**

**c) Interacts with plasma proteins and doesn’t produce any effect**

**d) Binds to the receptors without directly altering their functions**

**14. Which of the following property combinations is peculiar to the majority of NSAIDs?**

**a) Antihistaminic, antipyretic, analgesic**

**b) Immunodepressive, anti-inflammatory, analgesic**

**c) Antipyretic, analgesic, anti-inflammatory**

**d) Anti-inflammatory, immunodepressive, antihistaminic**

**15. Tick the drug used for amoebiasis treatment:**

**a) Nitrofurantoin**

**b) Iodoquinol**

**c) Pyrazinamide**

**d) Mefloquine**

**16. Tick the antimalarial drug having a gametocidal effect:**

**a) Mefloquine**

**b) Primaquine**

**c) Doxycycline**

**d) Sulfonamides**

**17. Which of the following antiseizure drugs produces enhancement of GABA-mediated inhibition?**

**a) Ethosuximide**

**b) Carbamazepine**

**c) Phenobarbital**

**d) Lamotrigine**

**18. Indicate the anticancer alkylating drug, and a derivative of chloroethylamine:**

**a) Methotrexate**

**b) Cisplatin**

**c) Cyclophosphamide**

**d) Doxorubicin**

**Section II: SAQs**

1. **State the class, mode of action, clinical indication(s) and one side effect of each of the following drug; (12mks)**
2. **candesartan**
3. **Rabeprazole**
4. **Phenelzine**
5. **Efavirenz**

**In the elderly, peptic ulceration induced by non-steroidal anti-inflammatory drugs can best be treated with:-**

**a) Bismuth chelate.**

**b) Misoprostol*.***

**c) Metoclopramide.**

**d) Antacids.**

**. One of the following is a bronchodilator;**

**A. Corticosteroids**

**B. Salbutamol**

**C. Ketotifen**

**D. Sodium cromoglycate**

**3. Third generation cephalosporin that can be given orally is:**

**A. Cefixime**

**B. Cefpirome**

**C. Cefaclor**

**D. Cefadroxil**

**Mechanism of action of fluoroquinolones is:**

**A. Inhibits cell wall synthesis**

**B. Inhibits protein synthesis**

**C. Inhibits DNA gyrase**

**D. Interferes with intermediary metabolism**

**of the following antibiotics class is not safe in Pregnancy:**

**A. Quinolones**

**B. Cephalosporins**

**C. Penicillins**

**D. Macrolides**

**Which among the following drug is used for tinea corporis**

**A. Clotrimazole**

**B. Diclofenac**

**C. Furosemide**

**D. Ampicillin**

**Topically used antifungal agent is:**

**A. Griseofulvin**

**B. Clotrimazole**

**C. Amphotericin B**

**D. Physostigmine**

**One of the following drug used in dyslipidemia;**

**A. Aspirin**

**B. timolol**

**C. atovastatin**

**D. ranferon**

**Local anesthetics produce:**

**A. Analgesia, amnesia, loss of consciousness**

**B. Blocking pain sensation without loss of consciousness**

**C. Alleviation of anxiety and pain with an altered level of consciousness**

**D. A stupor or somnolent state**

**Tick the drug used for of organophosphorous poisoning;**

**A. Atropine**

**B. Pilocarpine**

**C. propranolol**

**D. Edrophonium**

**The primary route of administration of insulin is:**

**A. Intradermal**

**B. Subcutaneous**

**C. Intramuscular**

**D. Intravenous**

**Combination of sulfonamides with trimethoprim:**

**A. Decreases the unwanted effects of sulfonamides**

**B. Increases the antimicrobial activity**

**C. Decreases the antimicrobial activity**

**D. Increases the elimination of sulfonamides**

**Patient XY has profuse rhinorrhoea and sneezing. Which amongst the following drugs would you prescribe him?**

**A. Pheniramine**

**B. Promethazine**

**C. Dimenhydrinate**

**D. levocetirizine**

**Drug of choice for burn dressing is;**

**A. Silver sulphadiazine**

**B. Diclofenac**

**C. Povidone iodine**

**D. Chlorhexidine**

**SAQ**

1. **State the class, mode of action and one clinical indication of each of the following drugs**
2. **Mefenamic acid (2mks)**
3. **Metiformin (2mks)**
4. **Flucloxacilin (2mks)**
5. **Enalapril (2mks)**
6. **Prednisolone (2mks)**
7. **A) classify antidepressants, stating the mechanism of action and an example in each class 12mks**

**b. describe four adverse reactions associated with the use of antipsychotics drugs 8mks**

1. **State the four classes of diuretics based on the specific tubular sites of action , naming an example in each case 4mks**

**b. for each of the classes named above, state 2 clinical uses and the corresponding mechanism of action in each case. 16mks**

**long answer question (20mks)**

1. **To date tremendous progress has been made in the fight against HIV/AIDS through the use of anti-retroviral drugs.**
2. **Classify and describe the mechanism of action of anti-retroviral drugs, stating one example in each class 16mks**
3. **State one adverse reaction for each of the drugs stated above. 4mks**
4. **Aminoglycosides are some of the anti-bacterial agents that are commonly used for the treatment of a number of infections.**
5. **Name any four drugs that fall under this class 2mks**
6. **Describe the mechanism of action of the drugs 4mks**
7. **State four clinical uses of the drugs 4mks**
8. **Describe the mechanisms of resistance against these drugs (2mks)**
9. **List shortcomings that are encountered use of penicillin and explain how these shortcomings have been addressed 8mks**