

REPUBLIC OF KENYA
MINISTRY OF HEALTH



PHARMACY AND POISONS BOARD
MODEL EXAMINATION QUESTION PAPER

STAGE TWO: PAPER 1

TIME: 9.00 A.M. – 12.00 NOON

DATE: SEPTEMBER 2017

EXAM NUMBER:

INSTRUCTIONS TO CANDIDATES

This examination consists of **THREE PARTS** as follows:

Part I:

This consists of **100 Multiple Choice Questions**. Use the answer sheet provided to indicate to indicate your answer choices. For each question, select **only one** most appropriate answer choice. Write your Exam Number clearly on the separate answer sheet provided using blue or black ink pen.

Part II:

This part consists of **15 Short Answer Questions**. Answer **all** the questions in the spaces provided.

Part III:

This consists of **3 Essay Questions**. Attempt **all**. Write **all** your answers on the sheets of paper provided. **Start each question on a separate sheet of paper and write your Exam Number on all the answer sheets.**

At the end of the examination, put all your answers sheets in the envelope provided. Write **your Exam Number** on the envelope. **DO NOT** write your name on the Answers Sheet, any page of this Examination Paper nor the envelope.

PART I:

This part consists of Multiple Choice Questions. Use the answer sheet provided to indicate your answer choices. For each question select the most appropriate answer.

1. In what order do managers typically perform their managerial functions?
 - A. Organizing, Planning, Controlling, Leading
 - B. Organizing, Leading, Planning, Controlling
 - C. Planning, Organizing, Leading, Controlling
 - D. Planning, Organizing, Controlling, Leading

2. Which of the following is not a key management skill in planning?
 - A. Conceptual skills
 - B. Analytical skills
 - C. Computing skills
 - D. Communication skills

3. Efficiency refers to
 - A. proper utilization of resources
 - B. the additive relationship between costs and benefits
 - C. the exponential nature of costs and outputs
 - D. increasing outputs regardless of cost

4. In management, the process of monitoring, comparing and correcting is called
 - A. controlling
 - B. coordinating
 - C. leading
 - D. organizing

5. The deliberate arrangement of people to accomplish a specific purpose is termed, a(an)
 - A. structure
 - B. process
 - C. organization
 - D. assembly operation

6. Recruitment and selection must be effective to ensure it
 - A. offsets high labor turnover
 - B. delivers highest caliber of individuals at optimum cost
 - C. has surplus in case of sickness and absence
 - D. encourages entry of new blood into the organization

7. Over reliance on internal recruitment can result in
 - A. reduced job performance
 - B. high labor turnover
 - C. internal conflict
 - D. poor group dynamics

8. Reward management in the modern era involves
 - A. dealing with issues of pay
 - B. a total reward approach
 - C. dealing with trade unions
 - D. dealing with legal issues

9. Which of the following healthcare system barriers can affect patients' adherence?
 - A. Treatment of asymptomatic disease
 - B. Inadequate follow up or discharge planning
 - C. Forgetfulness
 - D. Inadequate health insurance

10. Organization values are important because they help to
 - A. shape mission statements
 - B. increase sales
 - C. guide behavior and recruitment decisions
 - D. define market research

11. What is the first step in managing a first aid situation?
 - A. Move the casualty out of danger
 - B. Ask the casualty if they are in pain
 - C. Sit the casualty up
 - D. Check for danger, using all your senses

12. The most important aspect to manage in an unconscious person?
 - A. bleeding
 - B. airway patency
 - C. fractures
 - D. spinal injuries

13. External bleeding is stopped by
 - A. applying rest, ice, compression and elevation
 - B. applying direct or indirect pressure around the wound
 - C. running cold water on the wound
 - D. applying an adhesive strip to the wound

14. A person suffering from nose bleed should be placed
- sitting with head forward and nose pinched
 - sitting with the nose plugged to avoid unnecessary blood loss
 - sitting with head back and nose pinched
 - supine with nose pinched
15. Bleeding observed from a vein can be described as
- bright red and flowing
 - dark red and spurting
 - dark red and flowing
 - bright red and spurting
16. What questions would you first ask a person who you suspect was choking?
- Can you breathe, cough or speak?
 - What did you choke on?
 - Can you hear me, cough or tell me what you choked on?
 - Can you run fast?
17. If you are the first person on the scene of a car accident, what should you do first?
- Assess the scene to see if it is safe
 - Call the emergency number
 - Move victims away from the wreckage
 - Check victims to see if they are breathing
18. Which of the following is not a safe and effective way to check if an unconscious person is breathing?
- Look for up and down chest movement
 - Block the victims nose to see if choking begins
 - Listen for breathing sounds
 - Feel for breath out of mouth with your hand or cheek
19. What is the best way to treat 1st and 2nd degree burn?
- Cool the skin with cold water or wet fabric
 - Apply burn ointment
 - Cool the skin with ice
 - Apply moisturizers to the skin to rehydrate the burned area
20. What will you do if there is a foreign body in the eye?
- Blow it away
 - Irrigate with clean water
 - Rub it away
 - Apply topical cream

21. What would you do in the case where a person has swallowed a caustic agent?
- A. Induce vomiting by helping him to soothe his throat
 - B. Give him milk to drink
 - C. Give him vinegar to drink
 - D. Mouthwash with clean water
22. What would you do if you sprained your ankle?
- A. Apply ice pad to the sprained ankle
 - B. Apply hot pad to the sprained ankle
 - C. Stretch the injured limb
 - D. Massage the sprained ankle
23. Compared to subcutaneous injection, intramuscular injection of drugs
- A. produces faster response
 - B. is more painful
 - C. is unsuitable for depot preparations
 - D. has high incidence of anaphylactic reactions
24. Which of the following drugs requires dose adjustment guided by repeated measurements of the affected physiological parameters?
- A. Oral contraceptives
 - B. Antidepressants
 - C. Oral anticoagulants
 - D. Anti-epileptics
25. Which of the following drugs is generally administered in standard doses without the need for dose individualization?
- A. Insulin
 - B. Anti-epileptics
 - C. Prednisolone
 - D. Mebendazole
26. Benzodiazepines are commonly used to treat
- A. schizophrenia
 - B. depression
 - C. manic disorders
 - D. anxiety disorders
27. The electrolyte levels most likely to be disturbed in a patient diagnosed with the syndrome of inappropriate anti-diuretic hormone secretion is
- A. sodium
 - B. potassium
 - C. calcium
 - D. magnesium

28. The medication least likely to be used in prevention or treatment of peripheral neuropathy is
- A. hydroxycobalamin
 - B. pyridoxine
 - C. atorvastatin
 - D. thiamine
29. Which of the following drugs is used for treating roundworm infestation?
- A. Praziquantel
 - B. Pyrantel
 - C. Bithionol
 - D. Niclosamide
30. The drug recommended for treatment of extra-luminal amoebiasis is
- A. iodoquinol
 - B. tetracycline
 - C. metronidazole
 - D. diloxanide
31. The drug of choice for syphilis treatment is
- A. penicillin
 - B. chloramphenicol
 - C. ciprofloxacin
 - D. gentamicin
32. What term is used to describe a decrease in responsiveness to a drug which develops in a few minutes?
- A. Refractoriness
 - B. Tachyphylaxis
 - C. Tolerance
 - D. Cumulation
33. Which drug is used for cestodiosis treatment?
- A. Pyrantel
 - B. Piperazine
 - C. Ivermectin
 - D. Praziquantel
34. Trichomoniasis is treated with
- A. tetracycline
 - B. metronidazole
 - C. suramin
 - D. pyrimethamine

35. Which of the following recommendations would you give a patient on oral sulfonamide treatment to prevent its precipitation and crystalluria?
- A. Take a drink with acidic pH
 - B. Take a drink with alkaline pH
 - C. Take saline drink
 - D. Restrict drinking
36. Dermatomycosis is treated with
- A. vancomycin injection
 - B. nystatin tablets
 - C. amphotericin B injection
 - D. griseofulvin tablets
37. Aminoglycosides have the following unwanted effects?
- A. Gastric irrigation
 - B. Pancytopenia
 - C. Hepatotoxicity
 - D. Ototoxicity
38. Which of the following is not an indication for urethral catheterization?
- A. Urodynamic investigations
 - B. Peritoneal dialysis
 - C. Hypotonic bladder
 - D. Intractable incontinence
39. The best antihypertensive agent for a diabetic patient who has developed persistent proteinuria and left ventricular hypertrophy due to raised blood pressure is
- A. thiazide diuretic
 - B. angiotensin converting enzyme inhibitor
 - C. beta adrenergic blocker
 - D. alpha adrenergic blocker
40. Which drug would you advise against in a hypertensive patient who is also asthmatic?
- A. Nifedipine
 - B. Propranolol
 - C. Clonidine
 - D. Enalapril
41. Unwanted effects of zidovudine are
- A. hallucination and dizziness
 - B. anaemia and insomnia
 - C. hypertension and vomiting
 - D. peripheral neuropathy

42. Mr. Kamau has been diagnosed with echinococcosis. The most appropriate treatment for the condition is
- A. suramin
 - B. metronidazole
 - C. piperazine
 - D. albendazole
43. The anxiolytic agent with least sedative effects is
- A. clorazepate
 - B. chlordiazepoxide
 - C. diazepam
 - D. buspirone
44. The antipsychotic agent which possess pharmacological action characterized by high antipsychotic potency, high extrapyramidal effects and low sedation is
- A. amitriptyline
 - B. bupropion
 - C. clozapine
 - D. haloperidol
45. Adverse peripheral effects, like loss of visual accommodation, dry mouth, tachycardia, urinary retention and constipation are usually due to
- A. alpha adrenoreceptor blockade
 - B. super sensitivity of dopamine receptor
 - C. muscarinic cholinoreceptor blockade
 - D. dopamine receptor blockade
46. Which vitamin can mask the symptoms of pernicious anemia by alleviating the anemia but not preventing the neurological damage?
- A. Folic acid
 - B. Niacin
 - C. Vitamin D
 - D. Pyridoxine
47. Hypoglycemia is rarely seen with these drugs used as mono-therapy except
- A. metformin
 - B. rosiglitazone
 - C. miglitol
 - D. glyburide

48. A therapeutic dose of amphetamine would lead to the following actions except
- A. prolonged alteration span
 - B. wakefulness
 - C. lower seizure threshold
 - D. delay fatigue
49. The most likely complication of prolonged nasal decongestant use is:
- A. naso-pharyngeal moniliasis
 - B. eustachian tubes blockage
 - C. nasal mucosa hypertrophy
 - D. atrophic rhinitis
50. Patient using first generation H₁ antihistamine should be advised to avoid
- A. direct sunlight
 - B. strenuous physical exercise
 - C. consuming cheese
 - D. operating machinery
51. Erythromycin should not be given to a patient being treated with terfenadine because
- A. erythromycin induces metabolism of terfenadine
 - B. harmful ventricular arrhythmias can occur
 - C. terfenadine inhibits metabolism of erythromycin
 - D. terfenadine antagonizes antimicrobial action of erythromycin
52. H₁ antihistamines are beneficial in
- A. certain type I allergic reactions only
 - B. all types of allergic disorders
 - C. certain type IV allergic reactions only
 - D. bronchial asthma
53. Which of the following drugs is most commonly used for migraine prophylaxis?
- A. Ergotamine
 - B. Methysergide
 - C. Propranolol
 - D. Sumatriptan
54. Dysmenorrhoea is often associated with excess production of the following autocooids by endometrium
- A. prostaglandins
 - B. bradykinins
 - C. platelet activating factors
 - D. serotoninins

55. The following are reasons for aspirin contraindication in pregnant women near term except
- A. it may delay and/or prolong labour
 - B. it may lead to blood loss during delivery
 - C. foetus may suffer premature closure of ductus arteriosus
 - D. it may lead to acid-base and electrolytes disturbances
56. Phenylbutazone should be used only in patients not responding to other non-steroid anti-inflammatory drugs because it
- A. has lower anti-inflammatory efficiency than other NSAIDS
 - B. has potential to cause agranulocytosis
 - C. has weak analgesic action
 - D. alters protein binding and metabolism of many drugs
57. The following anti-inflammatory analgesic is recommended for pediatric use?
- A. Ketorolac
 - B. Indomethacin
 - C. Ibuprofen
 - D. Piroxicam
58. The following anti-rheumatic drug affords symptomatic relief but does not bring about remission in rheumatoid arthritis?
- A. Gold sodium thiomalate
 - B. Prednisolone
 - C. Hydroxychloroquine
 - D. Leflunomide
59. The drug of choice in acute gout is
- A. colchicine
 - B. allopurinol
 - C. indomethacin
 - D. dexamethasone
60. The most prominent dose related side effect of salbutamol is
- A. muscle tremor
 - B. rise in blood pressure
 - C. hyperglycemia
 - D. central nervous system stimulation

61. The most appropriate prophylactic drug therapy for a 10 year old child who suffers regular exercise induced asthmatic attacks is
- oral salbutamol
 - oral theophylline
 - inhaled salmeterol
 - inhaled sodium cromoglycate
62. Hyperprolactinemia can cause the following except
- amenorrhoea
 - gynaecomastia
 - depressed fertility
 - multiple ovulation
63. Serum TSH levels are high in most cases of
- Myxedema
 - Grave's disease
 - carcinoid thyroid
 - toxic nodular goiter
64. Anemia due to renal failure is managed using
- folic acid
 - erythropoietin
 - iron supplements
 - cyanocobalamin
65. Which of the following is not a class one antiarrhythmic drug?
- Quinidine
 - Lidocaine
 - Amiodarone
 - Phenytoin
66. Which of the following is the drug of choice for the management of atrial flutter and fibrillation?
- Digoxin
 - Calcium channel blocker
 - Atropine
 - Sotalol
67. Which of the following side effects is not associated with angiotensin converting enzyme inhibitors?
- Cough
 - Angioedema
 - Hyperkalemia
 - Cold extremities

68. Which of the following is the drug of choice for the management of an acute angina attack?
- A. Nitroglycerin
 - B. Amlodipine
 - C. Sotalol
 - D. Nicardipine
69. Which of the following drugs has reno-protective effects in diabetic patients?
- A. Prazosin
 - B. Hydralazine
 - C. Enalapril
 - D. Nifedipine
70. A patient has a urinary tract infection and suffers from frequent urination because of a spastic bladder. Which of the following agents is least likely to be beneficial?
- A. Flavoxate
 - B. Sulfonamides
 - C. Methenamine
 - D. Cyclosporine
71. A patient was put on nitrofurantoin. Which of the following statements is least appropriate when advising the patient?
- A. Avoid alcohol
 - B. Take after meals
 - C. Urine may turn brown or dark yellow
 - D. May cause dizziness
72. A patient is on spironolactone and enalapril. Which of the following side effects should one watch out for?
- A. Hyperkalemia
 - B. Metabolic acidosis
 - C. Hyperglycemia
 - D. Hypomagnesia
73. Which of the following diuretics would be the drug of choice in a patient with sudden severe ascites?
- A. Furosemide
 - B. Indapamide
 - C. Triamterene
 - D. Acetazolamide

74. A patient has advanced prostate cancer with metastatic bone pain. Which of the following drugs can reduce the pain?
- A. Nilutamide
 - B. Prazosin
 - C. Tamsulosin
 - D. Tamoxifen
75. Ergocalciferol is given to patients on dialysis to
- A. manage anemia
 - B. promote erythropoiesis
 - C. reduce ketoacidosis
 - D. manage secondary hyperparathyroidism
76. Which of the following devices improves inhalation in asthmatic children who use metered dose inhalers?
- A. Spacers
 - B. Epipen
 - C. Peak flow
 - D. Dermal patches
77. Which of the following is a mast cell stabilizer?
- A. Cromolyn sodium
 - B. Omalizumab
 - C. Salmeterol
 - D. Ipratropium
78. Phenylephedrine is given intra-nasally as a decongestant. Its frequency of use is restricted to prevent
- A. rebound nasal congestion
 - B. systemic side effects
 - C. bronchoconstriction
 - D. dry nasal spaces
79. A 40 year old taxi driver is sneezing and has profuse watery discharge. Which of the following drugs would you recommend?
- A. Chlorpheniramine
 - B. Diphenhydramine
 - C. Fexofenadine
 - D. Promethazine

80. A patient reports having bloody diarrhea and requests for assistance. What would you recommend?
- A. Use loperamide
 - B. Drink plenty of milk
 - C. Go to hospital
 - D. Take a lot of water
81. A 30 year old patient using carbamazepine due to herpes zoster would like to use a family planning method. What would you recommend?
- A. Depo provera
 - B. Oral contraceptives
 - C. Intra uterine device
 - D. Progesterone only contraceptives
82. A diabetic patient who has been using glibenclamide develops tuberculosis. Two weeks after initiation of therapy, hyperglycemia develops. The best option for this patient is to
- A. use insulin
 - B. stop the antimycobacterial therapy
 - C. use gliclazide
 - D. use dieting alone
83. After using budesonide inhaler for two weeks, an asthmatic patient develops whitish colouration in the oral cavity. What preventive strategy would you recommend?
- A. Rinsing the mouth with the water after inhaling
 - B. Use of oral antibiotics
 - C. Use of antiviral agents daily
 - D. Use of antihelmintics daily
84. Following demise of her child at two months of age, a mother approaches you due to breast engorgement. Which drug should be given?
- A. Chlorpromazine
 - B. Bromhexine
 - C. Bromocryptine
 - D. Haloperidol
85. A patient who is allergic to amoxicillin develops tonsillitis and requests your advice. Which drug would you recommend?
- A. Cefuroxime
 - B. Azithromycin
 - C. Meropenem
 - D. Cloxacillin

86. A 35 year old patient is using levothyroxine and would like to know how long the treatment will last. What would be your response?
- A. For 6 years
 - B. For life
 - C. For one year
 - D. For 10 years
87. Due to malaria diagnosis, J.M is prescribed quinine. What relevant information would you give?
- A. The drug can cause weight gain
 - B. Tinnitus may occur
 - C. Excessive insomnia may be experienced
 - D. Severe dysentery may occur
88. Which of these drugs should be given at least 2 hours following oral iron therapy?
- A. Ciprofloxacin
 - B. Clarithromycin
 - C. Cotrimoxazole
 - D. Amoxicillin
89. The following are true regarding voluntary counseling and testing centers except
- A. they must be approved by the authority
 - B. they must offer their services in a private room
 - C. they must test everyone who present themselves at the centre
 - D. their documents must remain private and confidential
90. Which of the following medicines is used in the management of opioid drug addiction?
- A. Naltrexone
 - B. Menadione
 - C. Methotrexate
 - D. Dextromethorphan
91. It is generally considered safe to vaccinate pregnant women with the following vaccinations except
- A. tetanus – diphtheria
 - B. hepatitis B
 - C. inactive B influenza
 - D. varicella

92. In the recently concluded kick polio campaign Betty's daughter was not vaccinated. Given that most children in her village were vaccinated, which of the following immunities is she likely to benefit from?
- A. Natural immunity
 - B. Herd immunity
 - C. Passive immunity
 - D. Artificial immunity
93. Which of the following is the correct schedule for post exposure prophylaxis against rabies?
- A. Days 0,1,2,5,6
 - B. Days 0,3,7,14,28
 - C. Days 0,3,10,15,20
 - D. Days 1,5,10,15,28
94. Measles vaccine should not be given to a child of what age?
- A. 3 months
 - B. 8 months
 - C. 12 months
 - D. 15 months
95. A collection of interrelated records is called a
- A. Spreadsheet
 - B. Database
 - C. Management information system
 - D. Text file
96. Which of the following is not an operating system?
- A. Android
 - B. Oracle
 - C. Windows
 - D. Google
97. Which of the following medical equipment uses radio waves?
- A. CAT scanner
 - B. X-ray
 - C. MRI scanner
 - D. ECG

98. Which part of a computer interprets program instructions and initiates control operation?
- A. Input
 - B. Output
 - C. Storage unit
 - D. Control unit
99. A program that is employed in the development, repair or enhancement of another program is known as?
- A. System software
 - B. Application program
 - C. Utility program
 - D. Software tool
100. Which of the following refers to coding of data so that it cannot be easily understood when intercepted?
- A. Bar-coding
 - B. Decoding
 - C. Encryption
 - D. mnemonics

PART II:

This part consists of Short Answer Questions. Answer ALL the questions in the spaces provided.

1. Outline any three ways in which use of bar-code technology in hospital pharmacies can minimize medication errors. (5Marks)
2. Many hospitals in Kenya currently use electronic data management systems to store patient information. List any five ways in which breach of patient privacy can be reduced with such a system. (5 Marks)
3. Mrs. PH is a 62 year old lady who has hypertension and is on bendroflumethiazide, 2.5mg daily. She has smoked for over 40 years and her BMI is 30. This morning she fell on the floor and was rushed to the hospital. At the Casualty, an ECG showed an acute ST elevation and blood tests showed raised creatinine kinase-MB and troponins. A venous blood glucose level of 23.6 mmol/L was confirmed.
 - a) What's her diagnosis? (1 Mark)
 - b) What is the risk factor for the cardiac disease? (2 Marks)
 - c) How should she be treated? (2 Marks)
4. Mr. TC, a 70 year old man who presented with a history of increasing tiredness over the last 54 weeks, has a past medical history of a partial gastrectomy 4 years ago. On questioning, his relevant symptoms included 'pins and needles' in his toes and loose bowel. He said he was a poor feeder but ate red meat twice a week.
 - a) What could be the reason for the 'pins and needles' syndrome? (1 Mark)
 - b) Why did it take 4 years after gastrectomy for Mr. TC to develop this syndrome? (2 marks)
 - c) How long will it take for Mr. TC to respond to treatment? (2 Marks)
5. Mrs. Kamau is a 66 year old woman. She has recently been complaining of tiredness, lethargy and weight gain. Her physician performed routine thyroid function tests and found that she had primary hypothyroidism. Her previous medical history includes congestive cardiac failure for the last 5 years. Her doctor plans to start her on levothyroxine sodium therapy. Her current medication include:
 - Ramipril 5mg daily
 - Furosemide 80mg daily
 - a) What are the therapeutic objectives in the patient? (1 Mark)

- b) Why should thyroxin therapy be instituted slowly and cautiously? (2 Marks)
- c) How should the replacement therapy be monitored? (2 Marks)
6. A 30 year old man presents to you at a community pharmacy seeking a remedy for vomiting which had an acute onset, 12 hours previously. Suggest any five questions that would you ask to determine the nature, cause and seriousness of the symptoms? (5 Marks)
7. Mrs. JS is attending an outpatient clinic, 3 weeks after her fourth hospital admission for asthma in a year. She is 44 years and was diagnosed with asthma at her fourth birthday. Her current medication is:
- Salbutamol pressurized MDI 2 puffs PRN
 - Fluticasone pressurized MDI 2 puffs BD
 - Prednisolone tabs 8mg OD
 - Theophylline MR 500mg BD
 - Methotrexate tabs 10mg once weekly
- She has received oral steroids in addition to fluticasone for 3 years; she started at 15mg daily and dosage is now reduced to 8 mg. She has been taking methotrexate for 3 months but has not reduced her oral steroid dose. She has also tried oral cyclosporine in the past year in order to reduce exacerbation with no success.
- a) What monitoring should be performed in order to prevent or minimize the long term effects of steroids? (3 Marks)
- b) A trial of subcutaneous terbutaline was decided. What patient monitoring and counseling should be initiated? (2 Marks)
8. Give an example of a drug with the following characteristics (5 Marks)
- Proton pump inhibitor that can be given intravenously
 - Cytoprotective agent to prevent stress ulcers in critically ill patients
 - One that forms a protective coat especially in patients with duodenal ulcers
 - One that is combined with aluminium hydroxide to minimize constipation
 - A prokinetic agent in patients with heart burn
9. Briefly explain the rationale for the following?
- Some psychiatric patients may be put on carbamazepine? (1 Mark)
 - A patient on haloperidol developed severe constipation. (1 Mark)

- c) A patient on chlorpromazine developed tremors, rigidity and a protruding tongue (1 Mark)
- d) The dose of thioridazine should not exceed 800mg daily (1 Mark)
- e) Patients on antipsychotics often take trihexyphenidyl (1 Mark)

10. A patient suffered acute myocardial infarction. She was immediately put on streptokinase and heparin. Two days later, protamine sulfate was administered. A week later she developed acute congestive heart failure with leg oedema and was put on eplerenone and nitroprusside. Briefly explain the role of each of the drugs that were used. (5 Marks)

- i) Streptokinase:
- ii) Heparin:
- iii) Protamine sulfate:
- iv) Nitroprusside:
- v) Eplerenone:

11. For each of the following conditions indicate the class of antibiotics that you would use for its management giving an appropriate example of the class of the antibiotic. (5 Marks)

Condition	Class	Example
a) Venereal disease caused by Chlamydia		
b) Severe streptococcus infection that is resistant to vancomycin and/or methicillin.		
c) Vaginal trichomoniasis		
d) Acute bone infection that does not respond to beta lactam antibiotics		
e) Prophylaxis of <i>Pneumocystis carinii</i> Pneumonia		

12. Give one key side effect for each of the following antibiotics/anti-infectives. (5 Marks)

- a) Vancomycin
- b) Chloramphenicol

- c) Rapid Quinine infusion
- d) Imipenem-cilastatin
- e) Erythromycin

13. Match the following zoonotic diseases with their main reservoirs: (5 Marks)
(Main Reservoirs: Mosquitoes, Poultry, Livestock, Rodents, Ticks, Cats, Dogs)

Zoonotic disease	Reservoir
a) Anthrax	
b) Avian flu	
c) Toxoplasmosis	
d) Rabies	
e) Plague	

14. Outline any five roles of planning in an organization (5 Marks)

15. Outline any five criteria used to assess rational use of drugs (5 Marks)

PART III:

This part consists of 3 Essay Questions. Attempt ALL.

1. a) Briefly describe desirable skills of a manager (7 Marks)
 - b) A 40 year old patient presents to a community pharmacy with wheezing and breathlessness. She has used salbutamol inhaler for five years and orders a bottle for the same. After receiving the inhaler, she puffs in but you notice that the procedure was defective. Give an outline of the steps that should be followed for optimal benefit when using the inhaler. (7 Marks)
 - c) Enumerate essential public health services in Kenya (6 Marks)
 - d) List possible sources of pesticide exposure to children (5 Marks)
2. PT is an 18 year old female admitted at Kenyatta National Hospital for the worsening of body swelling. Two years prior to this admission, PT was diagnosed as having systemic lupus erythematosus with a suspicion of renal involvement, and three months prior to admission, she received prednisolone 60mg daily orally and naproxen 250mg BD orally. On examination, PT was noted to be pale and lethargic. Edema was noted in the face and ankles. Blood pressure 190/110 mmHg, pulse rate 72/minute and respiration rate 20/minute. Lungs were clear and jugular venous pressure (JVP) was not elevated.

His initial laboratory findings were as follows:

• Serum sodium	-	142/mmol/L
• WBC	-	13000/mm ³
• Serum potassium	-	4.5 mmol/L
• Hemoglobin	-	7.1g/L
• Blood urea	-	11 mmol/L
• Hematocrit	-	22.4%
• Serum creatinine	-	117 mmol/L
• Platelets	-	236/mm ³
• Serum protein	-	37g/L
• Serum Albumin	-	22g/L
• Serum globulin	-	159/L

The following diagnoses were made:

- Systemic lupus erythematosus
- Nephrotic syndrome
- Hypertension
- Lupus nephritis
- Anaemia

- a) Based on above diagnosis, explain the following abnormalities found on the patient (10 marks)
- i) Ankle and facial oedema:
 - ii) Lethargy
 - iii) Hypertension
 - iv) Elevated serum creatinine
 - v) Abnormal hematocrit (kidney is involved in RBC synthesis through production of erythropoietin)

b) The following drugs therapy were instituted:

• Nifedipine	20mg TDS	Po
• Furosemide	40mg BD	Po
• Spironolactone	50mg BD	Po
• Atenolol	50mg BD	Po
• Prednisolone	50mg QID	Po
• Ferrous sulfate	200mg TID	Po
• Folic acid	5mg OD	Po

Describe the objectives for this management. For each objective, identify the drugs prescribed and state how each would be monitored. (7 Marks)

c) A mother came to the pharmacy with a prescription that had the following medicines:

- Retinol cream for management of acne
- Silver Nitrate/Caustic pencil for warts.

In addition, she had a prescription for Lindane (gamma benzene hexachloride) for management of scabies for her son. Answer the following

- i) Describe the procedure for application of caustic pencil on the wart (3 Marks)
 - ii) Describe how retinol creams should be applied and a precaution one must take before dispensing the product. (2 Marks)
 - iii) Describe how lindane should be applied (3 Marks)
3. a) A 35-year-old patient presents to the emergency room and examination reveals the following
- Temperature – 39°C

- Dull percussion note on the left side of the chest
- Crackles and breathlessness
- Tender abdomen
- Dehydration

On further enquiry, the patient confessed to have had a cough for 2 months and diarrhoea for 2 weeks. The following results were obtained from the laboratory.

- Stool -Trophozoites of *Entamoeba histolytica*
 -*Salmonella typhi*
- Sputum -Gram positive streptococci
 -*Mycobacterium tuberculosis*

- What is the diagnosis? (5 Marks)
 - Formulate a suitable treatment plan (5 Marks)
 - Three weeks after starting treatment, the patient develops severe jaundice, nausea and vomiting. How should the patient be managed? (5 Marks)
- b) Describe the therapeutic treatment of each of the following (10 Marks)
- Chancroid
 - Brucellosis
 - Trypanosomiasis
 - Trichomoniasis
 - Cryptococcal meningitis
 - Clostridium difficile* infection
 - Gonococcal ophthalmia neonatarum
 - Primary syphilis
 - Cholera
 - Pseudomonas aeruginosa* infection