



**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2023/2024 ACADEMIC YEAR**

**FOURTH YEAR THIRD TRIMESTER EXAMINATION**

**FOR THE DEGREE  
OF  
BACHELOR OF SCIENCE IN CLINICAL MEDICINE (UPGRADERS)**

**COURSE CODE: HCM 478**

**COURSE TITLE: INTERNAL MEDICINE (FQE)**

**DATE: THURSDAY 14<sup>TH</sup> DECEMBER 2023 TIME: 8:00AM - 11:00AM**

**INSTRUCTIONS TO CANDIDATES**

1. READ THE INSTRUCTIONS AT THE BEGIN OF EACH SECTION
2. DO NOT WRITE ON THE QUESTION PAPER.
3. NUMBER ALL QUESTIONS CORRECTLY.
4. THIS PAPER CONSIST OF:

Section A: Multiple Choice Questions (MCQ)	40 Marks.
Section B: Short Answer Questions (SAQ)	30 Marks.
Section C: Long Answer Question (LAQ)	30 Marks
5. NO MOBILE PHONE IS ALLOWED IN THE EXAMINATION ROOM

**DURATION: 3 Hours**

**MMUST observes ZERO tolerance to examination cheating**

**This Paper Consists of SIX Printed Pages. Please Turn Over.**

### **SECTION A MCQ 40MKS**

1. In a patient who has pleural effusion, samples for biochemistry are taken. If the pleural fluid proteins are more than 3g/dl, the following are likely cause except which one
  - a. Bacterial pneumonia
  - b. Malignancy
  - c. Pulmonary heart disease
  - d. Pulmonary embolism.
2. If the glucose in pleural fluid is less than 60mg/dl, the following are likely to be differential diagnoses with exception of
  - a. Malignancy
  - b. PTB
  - c. Rheumatoid pleuritis
  - d. SLE
3. Characteristics of exudative pleural effusion include all except
  - a. Pleural fluid protein/serum protein  $>0.5$
  - b. Pleural fluid LDH/serum LDH  $>0.6$
  - c. Pleural fluid LDH more than two-thirds normal upper limit for serum
  - d. Serum fluid LDH/Pleural LDH  $>0.6$
4. Pleural effusion secondary to congestive heart failure is characterized by
  - a. Pleural fluid protein/serum protein  $>0.5$
  - b. Pleural fluid LDH/serum LDH  $>0.6$
  - c. Pleural fluid LDH more than two-thirds normal upper limit for serum
  - d. BNP more than 1500pg/ml
5. Parapneumonic effusions are associated with all except which one:
  - a. Bacterial pneumonia
  - b. Lung abscess
  - c. Pulmonary tuberculosis
  - d. Bronchiectasis
6. Factors indicating the likely need for a procedure more invasive than a thoracentesis include the following except which one:
  - a. Loculated pleural fluid
  - b. Pleural fluid pH  $>7.20$
  - c. Pleural fluid glucose  $<3.3$  mmol/L ( $<60$  mg/dL)
  - d. Positive Gram stain or culture of the pleural fluid
7. The three tumors that cause ~75% of all malignant pleural effusions include except which one?

- a. Lung carcinoma,
  - b. Breast carcinoma,
  - c. Lymphoma.
  - d. Prostate cancer in aged
8. Major risk factors for tuberculosis include all except which one?
- a. HIV infection
  - b. Malnutrition
  - c. Autoimmune diseases
  - d. Extremes of age
9. Parameters in case definition for smear negative PTB include which of the following
- a. At least one initial sputum smear examinations positive for acid-fast bacilli (AFB) by microscopy.
  - b. One sputum smear examination positive for AFB plus radiographic abnormalities consistent with active PTB as determined by clinician, or
  - c. One sputum specimen positive for AFB plus sputum culture positive for M. tuberculosis.
  - d. No response to broad spectrum antibiotics
10. Which of the following statements is FALSE regarding chest x-ray in diagnosis of Tuberculosis?
- a. Used as a supportive tool in smear negative cases and in children
  - b. Used in diagnosis of extra-pulmonary TB
  - c. It is advisable to do other tests before X-ray
  - d. Less useful in smear negative patients
11. Regarding Mantoux test, which of the following statements is TRUE?
- a. Useful in assisting TB diagnosis in children
  - b. Does not differentiate TB infection and disease
  - c. False negatives can be obtained in patients with chronic illness
  - d. All of the above
12. Which of the following statements is incorrect of TB adenitis?
- a. Usually, unilateral
  - b. Most common site is the cervical area
  - c. Painless swelling - initially discrete then matted
  - d. Fistula and sinus formation
  - e. Usually, bilateral
13. Which of the following statements is FALSE regarding miliary TB?
- a. A result of direct spread

- b. Presents classically as pyrexia of uncertain cause
  - c. Large liver and spleen common
  - d. Choroid tubercles on fundoscopic examination
14. Which of the following drugs is used in the continuation phase of TB treatment?
- a. Streptomycin
  - b. Pyrazinamide
  - c. Ethambutol
  - d. Amikacin
15. Which of the following anti TB drugs is associated with ototoxicity in children?
- a. Streptomycin
  - b. Pyrazinamide
  - c. Ethambutol
  - d. Amikacin
16. Which of the following anti TB drugs is associated with peripheral neuropathies?
- a. Isoniazid
  - b. Pyrazinamide
  - c. Ethambutol
  - d. Rifampicin
17. Which of the following drugs is used in managing peripheral neuropathies related to anti TB treatment?
- a. Carbamazepine
  - b. Gabapentin
  - c. Pregabalin
  - d. All of the above
18. Regarding anti-TB drug induced hepatitis which of the following statements is FALSE?
- a. Only few anti-TB drugs are capable of causing
  - b. Elevation of liver enzymes is universal in the first weeks of treatment
  - c. In Overt liver disease temporarily withdraw drugs until overt disease clears
  - d. Reintroduce drugs sequentially or all, once overt disease clears
  - e. Exclude other causes of hepatitis where possible
19. In a patient with chronic, which of the following inhaler drugs are used as controllers?
- a. Salbutamol
  - b. Salmeterol
  - c. Beclomethasone
  - d. Montelukast
20. In acute asthma attack, which of the following DRUGS is best recommended?

2. (i). Outline the management of a 40-year-old who presents to you in a coma (10 marks).

(II) A 16-year-old form one student from Busia presents with a history of fever, joint pains, vomiting, and hallucinations.

a). What is your diagnosis (2mark)

b). Outline management of the above patient ( 3marks)

END



- a. Salbutamol as nebulizer
  - b. Salmeterol/steroid inhaler
  - c. Beclomethasone inhaler
  - d. Montelukast oral tablets
21. Three major treatment goals for chronic heart failure patients are
- a. Prevent disease progression
  - b. Reduce mortality
  - c. Restore fully the heart function
  - d. Relieve symptoms
22. Which of the following drugs reduces mortality in patients with impaired systolic function, with moderate to severe symptoms?
- a. Carvedilol
  - b. Digoxin
  - c. Losartan
  - d. Lasix
23. Which of the following drugs is aldosterone antagonist?
- a. Losartan
  - b. Spironolactone
  - c. Carvedilol
  - d. Labetalol
24. Which of the following drugs does not provide survival benefit in chronic heart failure patients?
- a. Digoxin
  - b. Spironolactone
  - c. Carvedilol
  - d. Enalapril
25. Which of the following group of drugs confers survival advantage to patients with chronic heart failure?
- a. Digoxin
  - b. Carvedilol
  - c. Enalapril
  - d. Lorstan
26. A 55-year-old man is noted to have moderately severe congestive heart failure with impaired systolic function. Which of the following drugs would most likely lower his risk of mortality?
- a. Angiotensin-converting enzyme inhibitors

- b. Loop diuretics
  - c. Digoxin
  - d. Aspirin
27. In the United States, which of the following is most likely to have caused the congestive heart failure in the patient described in Question 26?
- a. Diabetes
  - b. Atherosclerosis
  - c. Alcohol
  - d. Rheumatic heart disease
28. Atypical organisms implicated in causation of community acquired include
- a. *Klebsiella pneumoniae*
  - b. *Pseudomonas aeruginosa*
  - c. *Mycoplasma pneumonia*
  - d. *Haemophilus influenza*
29. Drugs of choice in treatment of Community acquired Pneumonia (CAP) outpatient with previous antibiotic exposure within last 3 months include
- a. Levofloxacin
  - b. Doxycycline
  - c. Azithromycin alone
  - d. Gentamycin
30. Patients with severe Community Acquired Pneumonia who remain hypotensive despite fluid resuscitation
- a. Heart failure is likely
  - b. may have adrenal insufficiency
  - c. Steroids are contraindicated indicated
  - d. None of the above
31. Follow-up Chest x-ray can be done ~4–6 weeks later in patients hospitalized for pneumonia. If relapse or recurrence of pneumonia is documented, particularly in the same lung segment, which of the following is TRUE
- a. possibility of an underlying neoplasm must be considered
  - b. Restart medications
  - c. Investigate HIV status
  - d. Refractory Pneumonia
32. Which of the following is the most common symptom of myocardial infarction?
- a) Chest pain
  - b) Dyspnea



- c) Edema
  - d) Palpitation
33. When do coronary arteries primarily receive blood flow?
- a) During inspiration
  - b) During diastole
  - c) During expiration
  - d) During systole
34. Which of the following conditions most commonly results in CAD?
- a) Atherosclerosis
  - b) DM
  - c) MI
  - d) Renal failure
35. Atherosclerosis impedes coronary blood flow by which of the following mechanisms?
- a) Plaques obstruct the vein
  - b) Plaques obstruct the artery
  - c) Blood clots form outside the vessel wall
  - d) Hardened vessels dilate to allow the blood to flow through
36. Which of the following risk factors for coronary artery disease cannot be corrected?
- a) Cigarette smoking
  - b) DM
  - c) Heredity
  - d) HPN
37. Which of the following actions is the first priority care for a client exhibiting signs and symptoms of coronary artery disease?
- a) Decrease anxiety
  - b) Enhance myocardial oxygenation
  - c) Administer sublingual nitroglycerin
  - d) Educate the client about his symptoms
38. Medical treatment of coronary artery disease includes which of the following procedures?
- a) Cardiac catheterization
  - b) Coronary artery bypass surgery
  - c) Oral medication administration
  - d) Percutaneous transluminal coronary angioplasty
39. Which of the following landmarks is the correct one for obtaining an apical pulse?
- a) Left intercostal space, midaxillary line
  - b) Left fifth intercostal space, midclavicular line

- c) Left second intercostal space, midclavicular line
  - d) Left seventh intercostal space, midclavicular line
40. Which of the following systems is the most likely origin of pain the client describes as knifelike chest pain that increases in intensity with inspiration?
- a) Cardiac
  - b) Gastrointestinal
  - c) Musculoskeletal
  - d) Pulmonary

### **SECTION B SHORT ANSWER QUESTIONS (30MARKS)**

1. List and explain 5 types of shock (5 marks)
2. A 20-year-old female presents to you with a history of headaches, dizziness, and easy fatigability over the last 2 months. On examination, you find she is very pale.
  - a). List the investigations you could do to this patient (2marks)
  - b). State the management of this patient (3marks)
3. Classify jaundice and the causes of jaundice and give two examples in each (5marks)
- 4.. State 5 opportunistic infections in HIV/AIDS and give drugs used in the management. (5marks)
5. Differentiate between nephrotic syndrome and acute glomerulonephritis (5marks)
6. A 20-year-old man who has been having misunderstanding with the parents in the recent past is found unconscious in their house and brought to you. On examination you notice unusual smell from the mouth, he is frothing and pupils are pinpoint.
  - a). What is the most probable diagnosis? (1mark)
  - b). State other clinical features you are likely to find (1mark)
  - c). Enumerate your plan of management. (3marks)

### **SECTION C LAQ 30 MARKS -ATTEMPT BOTH QUESTION**

1. A 55-year-old patient presents to you with a history of awareness of the heartbeat, gets easily tired even on doing little work, and has a cough and difficulty breathing especially when lying down in bed. He has swollen feet.
  - a). What is your diagnosis? (2Marks)
  - b). On examination, what signs are you likely to find (10marks)
  - c). Outline the management of this patient (3marks)



(University of Choice)  
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**UNIVERSITY EXAMINATIONS  
2023/2024 ACADEMIC YEAR**

**SECOND YEAR FIRST TRIMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
BACHELOR OF SCIENCE IN CLINICAL MEDICINE, SURGERY AND COMMUNITY  
HEALTH**

**COURSE CODE: HCM 231**

**COURSE TITLE: ENVIRONMENTAL AND OCCUPATIONAL HEALTH**

**DATE: 4<sup>th</sup> December 2023 TIME: 2:00pm – 4:00pm**

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**INSTRUCTIONS TO CANDIDATES**

Answer all questions

Section A: Multiple choice questions (MCQ) (20 Marks)

Section B: Short answer questions (SAQ) (40Marks)

Section C: Long answer questions (LAQ) (40Marks)

TIME: 2 Hours

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**SECTION A: Multiple Choice Questions (20Marks)**

1. During industrial treatment of water, flocculation refers to\_\_\_\_
  - a) Adding Aluminum sulphate to the water to neutralize negative charges on suspended particles
  - b) Screening of entrance to water treatment facility
  - c) Settling of larger particles in water to the bottom
  - d) Binding together of suspended particles to make them larger
2. Which of the following is not a key element in transmission of nosocomial infections?
  - a) Source of infecting organisms
  - b) A susceptible host
  - c) Mode of transmission for the micro-organism
  - d) Environment
3. Which of the following term can refer to a chemical substance that has ability to ignite a combustible material?
  - a) Corrosive
  - b) Oxidizing
  - c) Highly flammable
  - d) Very toxic
4. Organochlorines
  - a) Have steady chemical structures, hence they accumulate and persist in the environment
  - b) Contain a phosphate group, thus their action is irreversible
  - c) Inhibit the acetylcholinesterase enzyme
  - d) Are widely used in Kenya
5. From the following identify a water-based disease.
  - a) Diphyllbothriasis
  - b) Cholera
  - c) Trachoma
  - d) Onchocerciasis
6. Concerning the transmission of hospital infections, which of the following statements is true?
  - a) Contact transmission of infections is less frequent in a hospital setting
  - b) Airborne and droplet transmission are one and the same
  - c) Without observing infection prevention measures, administering medication may serve to transmit hospital infections to multiple patients
  - d) Vector borne transmission of is not possible in a well-maintained health facility
7. Ergonomic occupational hazards
  - a) Include low financial incentives
  - b) Are associated with improperly designed tools and work procedures
  - c) Are mainly caused by exposure to certain chemicals at a work place
  - d) Are very difficult to be fixed

8. Which heavy metal is associated with cognitive disorders among children?
  - a) Lead
  - b) Mercury
  - c) Chromium
  - d) Arsenic
9. Which of the following vectors falls in to the group of Crustacean?
  - a) Water fleas
  - b) Mosquitoes
  - c) Lice
  - d) Ticks
10. Regarding Aflatoxin, which of the following statements is TRUE?
  - a) Aflatoxin are toxic metabolites of bacteria *Aspergillus*
  - b) Aflatoxin G1, which is a potent carcinogen is exclusively produced by *Aspergillus flavus*
  - c) Aflatoxin M, which occur in animal products is hydroxylated metabolite of Aflatoxin B1
  - d) Aflatoxins are typically prevented during when drying grains
11. Why do polycyclic aromatic hydrocarbons produce pleasant smell when burning?
  - a) They are formed when organic matter is incompletely burned
  - b) They are degraded by microorganisms
  - c) They contain fused benzene rings in their structure
  - d) They are polychlorinated biphenyls
12. What is the meaning of macro-environment?
  - a) Close and immediate surrounding the organism
  - b) Physical, biological or psychosocial conditions external to the organism
  - c) Microorganisms surrounding the human being
  - d) Environment that has no impact on the well-being of an organism
13. One of the following initiatives is most likely to reduce needlestick injuries in health care facilities
  - a) Procuring many sharps containers
  - b) Avoidance of unnecessary injections
  - c) Construction of an incinerator in each health facility to destroy used needles
  - d) All of the above
14. Which of the following is not an element of standard precautions for nosocomial infections?
  - a) Contact precautions
  - b) Hand hygiene
  - c) Personal protective equipment
  - d) Care of patients' equipment
15. What is biomagnification?
  - a) Increase in the magnitude and availability of chemical element
  - b) Increase in the concentration of chemical elements along the food chain
  - c) Persistence of chemical elements in the environment



d) All of the above

16. Which of the following statements is TRUE?

- a) Regardless of the type, untreated plague is always fatal
- b) Transmission of plague is mainly through a bite from an infected rodent
- c) Elimination of rodents using chemical approach is the mainstay of prevention and control of plague
- d) Plague is still endemic in some countries

17. All the following statements describe heavy metals except?

- a) Heavy metals occur naturally in environment
- b) Health problems associated with heavy metals are not known
- c) Heavy metals are widely used both at industrial and individual level
- d) Heavy metals have a density at least five times greater than that of water

18. Eutrophication is a type of water pollution caused by

- a) Deforestation leading to soil erosion and increasing siltation in water bodies
- b) Excessive use of fertilizer which enriches water bodies with nutrients leading algal bloom
- c) Discharging untreated sewage to the environment leading to increased microbial content in water bodies
- d) Oil spills leading to decreased oxygen content in water bodies

19. Concerning workers' rights, one of the following statements is not true

- a) Protection of workers' rights is a responsibility of the employer
- b) Workers can demand for a decent working environment
- c) Employer-employee conflicts can only be addressed in a court of law
- d) Enhancing personal skill is the responsibility of the worker

20. Which of the following infectious diseases is transmitted by lice?

- a) Plague
- b) Malaria
- c) West Nile Hemorrhagic disease
- d) Typhus

