



(University of Choice)

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

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2022/2023 ACADEMIC YEAR**

**MAIN EXAM  
FOURTH YEAR SECOND SEMESTER**

**FOR THE DEGREE  
OF  
BACHELOR OF OPTOMETRY**

**COURSE CODE:** **BOV 422**

**COURSE TITLE:** **CLINICAL MEDICINE AND SYSTEMIC  
DISEASES IN OPTOMETRY**

**DATE:** 11/4/2023

**TIME:** 12.00-2.00 PM

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## **INSTRUCTIONS TO CANDIDATES**

THERE IS ONLY ONE SECTION IN THIS PAPER. Answer all questions

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating



## SECTION A

1. Which one of the following antibiotics is the treatment of choice for life-threatening *Staphylococcus aureus* systemic infection?
  - A. Penicillin
  - B. Vancomycin
  - C. Gentamicin
  - D. A cephalosporin
2. Which one of the following antibiotics is the treatment of choice for *Streptococcus pyogenes* infections (e.g., strep throat, impetigo)?
  - A- Penicillin
  - B- Vancomycin
  - C- Gentamicin
  - D- A cephalosporin
3. All except which one of the following is true about Lyme disease?
  - A- It is tick-borne.
  - B- Late manifestations are seen in the skin, joints, and nervous system.
  - A- C - It is usually diagnosed by bacterial culturing.
  - C- The organism is sensitive to tetracycline.
4. Which one of the following statements is NOT correct about herpes zoster?
  - A- Primary infection usually occurs in childhood in the form of chickenpox (varicella).
  - B- No systemic antiviral treatment exists at this time.
  - C- Post-herpetic neuralgia may occur.
  - D- Herpes zoster occurs after a reactivation of a latent nerve infection.
5. Health care workers exposed to HIV may be given immediate treatment with which one of the following medications?
  - A- Zidovudine (Retrovir)
  - B- Saquinavir (Invirase)
  - C- Ganciclovir (Cytovene)
  - D- HIV vaccine
6.  $\beta_1$ -Adrenergic receptor site stimulation causes all except which one of the following?
  - A- Vasoconstriction
  - B- Tachycardia
  - C- Increased myocardial contractility
  - D- Bronchoconstriction

7. The annual mortality rate of patients with asymptomatic carotid bruit has been estimated at 4%. The most likely cause of death is which one of the following?

- A- Non-hemorrhagic stroke
- B- Hemorrhagic stroke
- C- Subarachnoid hemorrhage
- D- Complications of heart disease

8. Which one of the following is most sensitive in distinguishing a myocardial infarction from unstable angina or non-cardiac chest pain?

- A- Elevation of the ST segment on the electrocardiogram
- B- Echocardiogram
- C- Elevated serum cardiac enzymes
- D- Depression of the ST segment on exercise stress testing

9. All but which one of the following may be indicated for the management of congestive heart failure?

- A-  $\alpha$ -Adrenergic antagonists
- B- Digitalis
- C- The calcium channel blocker diltiazem (Cardizem)
- D-  $\beta$ -Adrenergic antagonists

10. Which one of the following does not increase serum high-density lipoprotein cholesterol (HDL-C)?

- A- Aerobic exercise
- B- Moderate alcohol consumption
- C- Gemfibrozil (Lopid)
- D- Lovastatin (Mevacor)

11. Which one of the following is most indicative of restrictive pulmonary disease?

- A- Abnormal-appearing chest radiograph
- B- FEV<sub>1</sub> less than 80% predicted
- C- Low PO<sub>2</sub> in arterial blood gas
- D- Total lung capacity less than 70% predicted

12. Which one of the following is the best test to monitor heparin therapy?

- A- Prothrombin time (PT)
- B- Partial thromboplastin time (PTT)
- C- Bleeding time
- D- Platelet count

13. Which one of the following statements is not correct about rheumatoid arthritis?

- A- It tends to affect the large joints.
- B- Approximately 80% of patients are positive for rheumatoid factor.
- C- Stiffness at rest often improves with use.
- D- Extra-articular disease may be found.

14. A 50-year-old white male presents with acute nongranulomatous anterior uveitis. He has had chronic back pain for years. Which one of the following does NOT fit with his clinical syndrome?

- A- Sacroiliitis on radiography
- B- Spinal ankylosis on radiography
- C- Positive HLA-DR4
- D- Restrictive lung disease

15. Which one of the following is the most common ophthalmologic manifestation of systemic lupus erythematosus?

- A- Cranial nerve palsies
- B- Retinal vascular disease
- C- Cortical blindness
- D- Sjögren's syndrome

16. Renal disease is associated with all but which one of the following diseases?

- A- Rheumatoid arthritis
- B- Scleroderma
- C- Polyarteritis nodosa
- D- Wegener granulomatosis

17. Which one of the following is most effective for treating Wegener granulomatosis?

- A- Aspirin
- B- Nonsteroidal anti-inflammatory agents
- C- Cyclophosphamide
- D- Methotrexate

18. The definitive test for giant cell arteritis is which one of the following?

- A- Wintrobe sedimentation rate
- B- Westergren sedimentation rate
- C- C-reactive protein
- D- Temporal artery biopsy

19. In addition to uveitis, with or without hypopyon, which one of the following is the most common ophthalmic manifestation of Behcet's syndrome?

- A- Glaucoma
- B- Retinal vasculitis
- C- Corneal disease
- D- Eyelid ulcers

20. The most sensitive and specific test(s) for screening for thyroid disease is which one of the following choices?

- A-  $T_3$  level
- B- Free  $T_4$  and sensitive TSH levels
- C- Radioactive iodine uptake
- D- Thyroid-binding globulin level

21. A 44-year-old female presents with new onset polyarthralgia, including her hands, elbows, ankles, and knees. She is also noted to have a painful and tender rash affecting the shins of both legs. Inflammatory markers are high and autoantibodies were negative. Serum angiotensinconverting enzyme (ACE) was normal. A chest X-ray showed bilateral hilar lymphadenopathy. What is the most likely diagnosis?
  - A. Heerfordt's syndrome
  - B. Löfgren's syndrome
  - C. Rheumatoid arthritis
  - D. Reactive arthritis
22. In patients with juvenile idiopathic arthritis, which of the following has the highest risk of developing chronic anterior uveitis?
  - A. ANA +ve, oligoarthritis, younger age at diagnosis
  - B. ANA +ve, polyarthritis, older age at diagnosis
  - C. ANA -ve, oligoarthritis, younger age at diagnosis
  - D. ANA -ve, polyarthritis, older age at diagnosis
23. An 82-year-old retired engineer presents with right ocular redness and visual loss due to blurry vision and floaters over 3 weeks. His medical background is notable only for previously treated malaria. Examination reveals a right panuveitis. Through the moderately hazy vitreous a large pale patch is observed involving the macula of right fundus. There are no fundus haemorrhages and the left eye is normal. Optical coherence tomography (OCT) reveals derangement of the architecture of the outer retina. Which of the following is the most likely diagnosis?
  - A. Herpes zoster
  - B. Small cell carcinoma of the lung
  - C. Syphilis
  - D. Tuberculosis

## SECTION B

1. Discuss the procedure of sub- conjunctival injection, retrobulbar injection, sub tendon injection, peribulbar injection, intravenous injection (12 marks)
2. Applying the physical examination Techniques of Observation, palpations, percussions and auscultation, explain how they are applied during:( 35 marks)
  - i. Examination of the Skin
  - ii. Examination of the eyes
  - iii. Examination of the Mouth
  - iv. Auscultation of the Carotid Artery
  - v. Examination of the Abdomen
  - vi. Examination of the Genitourinary tract and Pelvis
  - vii. Examination of the lungs

