



AAI-003-038403 Seat No. _____

B. Voc. (MLMDT) (Sem. IV) (CBCS) Examination
March / April - 2016

**MLMDT-4.3 : Systemic Bacteriology, Mycology &
Virology**

Faculty Code : 003
Subject Code : 038403

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :**
- (1) All questions are compulsory.
 - (2) The paper is divided in two sections.
 - (3) There is no separate OMR sheet will be provided for Section I.
 - (4) Figures on right indicate marks.

SECTION - I

- 1 Answer the following MCQ : 20
- (1) What is the most diagnostic species characteristic of *Staphylococcus aureus* ?
 - (A) The production of hyaluronidase
 - (B) The production of penicillinase
 - (C) The production of coagulase
 - (D) The production of leukocidin
 - (2) *Serratia marcescens* produces pigment named as
 - (A) Pyocyanine
 - (B) Fluorescein
 - (C) Prodigiosin
 - (D) All of the above
 - (3) Toxic shock syndrome is caused by
 - (A) *Staph. albus*
 - (B) *Staph. aureus*
 - (C) *Strep. viridans*
 - (D) None of these

- (4) Which of the following indicates a possible case of tuberculosis?
- (A) The presence of gram-negative cocci in the lung secretions of the patient.
 - (B) The presence of gram-negative rods with bipolar staining in the lung secretions of the patient.
 - (C) The presence of acid-fast rods in the lung secretions of the patient.
 - (D) A positive Weil-Felix test.
- (5) The botulism toxin causes flaccid paralysis by
- (A) causing swelling in the meninges.
 - (B) inhibiting the action of cholinesterase in the synapses of central nervous system neurons
 - (C) inhibiting protein synthesis in neurons.
 - (D) blocking synaptic transmission at the motor neuron end plates.
- (6) Wound infections of *Clostridium perfringens* are often accompanied by
- (A) large, open sores on the body.
 - (B) intestinal ulceration.
 - (C) a red-colored skin rash.
 - (D) gas gangrene.
- (7) The cause of diphtheria, *Corynebacterium diphtheriae*,
- (A) Reproduces by "snapping division," in which the gram-positive rods snap in the middle but remain connected.
 - (B) Is arranged in a coryneform arrangement, with cells in V- and L-shaped patterns.
 - (C) Is a member of the family Enterobacteriaceae.
 - (D) Both (A) and (B) are true, but (C) is false.
- (8) Each of the following organisms is an important cause of urinary tract infections except:
- (A) *Klebsiella pneumonia*
 - (B) *Escherichia coli*
 - (C) *Bacterioides fragilis*
 - (D) *Proteus mirabilis*

- (9) Fishy odour is a characteristic of
- (A) *Escherichia coli*
 - (B) *Serratia marcescens*
 - (C) *Klebsiella pneumoniae*
 - (D) *Proteus* spp.
- (10) What is the reservoir for *Chlamydia psittaci* ornithosis?
- (A) Pigs
 - (B) Wild rodents
 - (C) Human
 - (D) Wild and domesticated birds
- (11) Which of the following organism is characterized by presence of axial filaments?
- (A) *Pseudomonas*
 - (B) *Bordetella*
 - (C) *Salmonella*
 - (D) *Leptospira*
- (12) The following are true about *Rickettsiae*.
- (A) Unicellular organisms
 - (B) Prokaryotic intracellular parasites
 - (C) Presence of 80 S ribosomes
 - (D) It causes hemolysis in human beings
- (13) Subacute sclerosing panencephalitis is caused by
- (A) Measles virus
 - (B) Mumps virus
 - (C) Rabies virus
 - (D) Parainfluenza virus
- (14) The causative agent of Burkitt lymphoma and infectious mononucleosis is _____.
- (A) Epstein-Barr virus
 - (B) Cytomegalo virus
 - (C) Hepes Simplex virus - I
 - (D) Varicella-zoster virus

- (15) Which is the chief cell wall constituent of the fungal cell wall?
- (A) Cellulose
 - (B) Chitin
 - (C) Chitin and Cellulose
 - (D) All of above
- (16) X and V factors from blood is essential for which of the following organism?
- (A) Shigella dysentery
 - (B) Hemophilus influenza
 - (C) Bordetella pertussis
 - (D) Candida albicans
- (17) What are hemagglutinin and neuraminidase?
- (A) Glycoprotein receptors on influenza's target cells
 - (B) Glycoprotein on influenza virus that contribute to virulence
 - (C) Exotoxins produce by influenza virus
 - (D) Proteins found in nucleus of influenza virus
- (18) Fungal cells that reproduce by budding are seen in the infected tissues of patients with
- (A) Candidiasis, cryptococcosis, and sporotrichosis
 - (B) Mycetoma, candidiasis and mucormycosis
 - (C) Tinea corporis, tinea unguium, and tinea versicolor
 - (D) Sporotrichosis, mycetoma and aspergillosis
- (19) Infection with dermatophyte is most often associated with
- (A) intravenous drug abuse
 - (B) inhalation of the organism from contaminated bird feces
 - (C) adherence of the organism to perspiration moist skin
 - (D) Fecal-oral transmission

- (20) Each of the following statements concerning *Cryptococcus neoformans* are correct EXCEPT
- (A) Its natural habitat is the soil, especially associated with pigeon feces
 - (B) Budding yeasts are found in the lesions
 - (C) The initial site of infection is usually the lung
 - (D) Pathogenesis is related primarily to the production of exotoxin A.

SECTION - II

- 2 (a) Answer in brief : (any **three**) **3×2=6**
- (1) What is Toxic shock syndrome?
 - (2) Write morphological characteristics of *Clostridium* and *Corynebacterium* spp.
 - (3) Define fungi. Give two names of human pathogenic fungi.
 - (4) Enlist the names of enterobacteriaceae group of bacteria.
 - (5) Write the mode of transmission of *Borrelia* organisms.
 - (6) What is Weil Felix test?
- (b) Answer in brief : (any **three**) **3×3=9**
- (1) Difference between gram positive and gram negative bacteria
 - (2) Write the life cycle of *Chlamydia*,
 - (3) Write a note on Food Poisoning by *Clostridium botulinum*.
 - (4) Give the one most obvious morphology and symptoms of *Aspergillus* infection.
 - (5) Describe the morphology and cultural characteristics of *Streptococcus*.
 - (6) Explain coagulase test.

(c) Answer in detail : (any **two**) **2×5=10**

- (1) Discuss morphology of *Treponema* and pathogenesis of syphilis.
- (2) Describe pathogenicity and treatment of meningitis
- (3) Describe morphology and clinical syndrome of *Klebsiella* spp.
- (4) Describe the symptoms, etiological agent, epidemiology, diagnostic techniques about coccidioidomycosis.
- (5) Write a note on dengue hemorrhagic fever and its complications.

3 (a) Answer in brief : (any **three**) **3×2=6**

- (1) What is Gas Gangrene?
- (2) What is bacteriological index?
- (3) Describe virulence factors of *E. coli*.
- (4) Enlist the antigenic structure of *Proteus* spp.
- (5) What is *Pneumocystis pneumonia*?
- (6) What are inclusion bodies?

(b) Answer in brief : (any **three**) **3×3=9**

- (1) What are clinical types of tetanus?
- (2) Write about morphology and clinical features of small pox virus.
- (3) Explain Lepromin test
- (4) Write the pathogenesis of cholera.
- (5) Give the one most obvious morphological, cultural, or other character that would allow one to clearly distinguish between *Candida albicans* and *Cryptococcus neoformans*
- (6) Write a note on Paul-Bunnell Test.

(c) Answer in detail : (any two)

2×5=10

- (1) Write in detail about pathogenesis of poliomyelitis.
 - (2) Lab diagnosis and treatment of anthrax.
 - (3) Discuss pathogenesis and laboratory diagnosis of bacillary dysentery.
 - (4) Add a note on different clinical features of herpes virus infection.
 - (5) Discuss typhoid fever and its diagnosis.
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