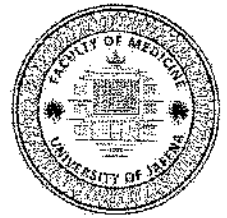




UNIVERSITY OF JAFFNA, SRI LANKA
SECOND EXAMINATION FOR MEDICAL DEGREES PART (I)
August 2026



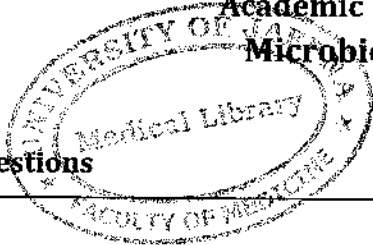
Academic Year 2021/2022

Microbiology - Paper I

Date: 12.08.2026

Answer all 30 questions

1.30 pm to 3.00 pm (1½ hours)



1. Endotoxins are
 - a) lipopolysaccharides
 - b) heat stable
 - c) part of the outer membrane of Gram-positive bacteria
 - d) used for vaccine production
 - e) important triggers of sepsis

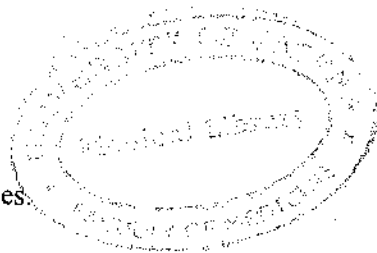
2. Advantages of using alcohol hand rub over hand washing include that alcohol hand rub
 - a) is quicker than hand washing
 - b) is more skin friendly than hand washing
 - c) is easier to perform
 - d) can be used after coming in contact with patients infected with spore forming organisms
 - e) can be used after coming in contact with patients' body fluids

3. Antibiotics that can be used in the treatment of *Pseudomonas aeruginosa* include
 - a) co-amoxi clav
 - b) ceftazidime
 - c) ertapenem
 - d) vancomycin
 - e) gentamicin

4. Penicillin G is used for infections with
 - a) *Bacteroides fragilis*
 - b) Methicillin Resistant *Staphylococcus aureus* (MRSA)
 - c) *Mycoplasma pneumoniae*
 - d) *Klebsiella pneumoniae*
 - e) *Acinetobacter baumannii*

5. State whether the following are true or false regarding innate immune responses.
 - a) It takes 5 - 7 days for the innate immune system to recognize pathogens.
 - b) Pathogens are recognized by detecting their epitopes during the innate immune response.
 - c) Pattern Recognition Receptors (PRR) recognize non-self-molecules during innate immune response.
 - d) IgM antibody is an important component of the innate immune response.
 - e) Memory cell are not produced in innate immune response.

6. Vaccines that should have been given to a 10-month-old child through National Immunization Programme in Sri Lanka include
- a) BCG
 - b) Hib vaccine
 - c) DTP (Diphtheria, Tetanus and Pertussis) vaccine
 - d) Human papillomavirus vaccine
 - e) Japanese encephalitis vaccine
7. State whether the following are true or false regarding candidiasis.
- a) Candidiasis is an opportunistic mycosis.
 - b) Vulvovaginal candidiasis is primarily transmitted sexually.
 - c) Broad spectrum antibiotic therapy predisposes to candidiasis.
 - d) Diabetes mellitus is a risk factor for invasive candidiasis.
 - e) Nystatin is effective in the treatment of mucocutaneous candidiasis.
8. State whether the following are true or false regarding eumycetoma.
- a) It is caused by dermatophytes.
 - b) It is an endogenous infection.
 - c) This infection can be confirmed by culture.
 - d) Patients present with multiple pus draining sinuses.
 - e) Topical azoles are the first choice of treatment.
9. *Haemophilus influenzae* is an important causative agent of
- a) acute sinusitis
 - b) otitis externa
 - c) conjunctivitis
 - d) community acquired pneumonia
 - e) epiglottitis
10. *Chlamydia trachomatis*
- a) is an obligate intracellular bacterium
 - b) can cause neonatal conjunctivitis
 - c) is routinely diagnosed by culturing the clinical specimens
 - d) infection is best treated with penicillin G
 - e) may cause pelvic inflammatory disease
11. State whether the following are true or false regarding the transportation of virological specimens.
- a) Viral transport medium is used for transportation of blood specimens.
 - b) Whole blood specimens should be frozen during transportation.
 - c) Swabs for viral PCR should be transported as dry specimen.
 - d) Refrigeration of specimens is preferred if transport is delayed.
 - e) Urine specimens for viral RT-PCR should not be transported in viral transport medium.



12. State whether the following are true or false regarding measles.
- a) Koplik spots usually appear before the rash.
 - b) Rash usually starts on the abdomen.
 - c) RT-PCR can be used to diagnose measles.
 - d) Measles commonly causes immune suppression.
 - e) Measles virus establishes lifelong latency.
13. Mumps virus
- a) is transmitted by contaminated fomites
 - b) infection can cause sensorineural deafness
 - c) specific IgM antibodies in serum sample confirms a recent infection
 - d) can cause congenital defects in the foetus
 - e) causes orchitis mainly after puberty
14. State whether the following are true or false regarding herpes simplex virus (HSV).
- a) HSV establishes latency in sensory ganglia.
 - b) Primary HSV infection is mostly symptomatic.
 - c) HSV encephalitis commonly involves the temporal lobe.
 - d) Neonatal herpes is most commonly acquired through transplacental transmission.
 - e) CSF PCR is the diagnostic test of choice for HSV encephalitis.
15. Epstein – Barr virus (EBV)
- a) causes infectious mononucleosis
 - b) infects B lymphocytes
 - c) is associated with cervical carcinoma
 - d) specific antibodies are detected by Paul-Burnell test
 - e) is effectively treated with antiviral drugs
16. State whether the following are true or false regarding Chikungunya virus (CHIKV).
- a) CHIKV is primarily neurotropic.
 - b) Severe arthralgia is a characteristic feature of CHIKV infection.
 - c) RT-PCR is useful during the acute phase of infection.
 - d) A maculopapular rash may occur during the acute febrile phase of the illness.
 - e) CHIKV infection is prevented by vaccination in Sri Lanka.
17. Viruses causing congenital defects include
- a) Measles virus
 - b) Rubella virus
 - c) Parvovirus B19
 - d) Influenza virus
 - e) Zika virus

18. A 53-year-old housewife visited the outpatient unit one day after a bite on her palm by the neighbour's dog. The dog was not vaccinated. The wound was deep and bleeding. The dog died the day after the bite. State whether the following are true or false regarding this situation.
- a) This patient should be considered as having had major exposure to rabies virus.
 - b) Rabies virus infection can be confirmed by immediate PCR test of her CSF.
 - c) Dog's head should be sent to the laboratory for rabies identification.
 - d) She should be given rabies immunoglobulin.
 - e) She does not need anti rabies vaccine.
19. A 69-year-old man presented with a history of sudden onset of high fever with chills, severe myalgia and severe malaise for one day. He also had dry cough. His temperature was 39.5°C, respiratory examination was unremarkable and there were no other significant findings. Seasonal influenza was one of the differential diagnoses. Seasonal influenza
- a) is acquired from infected birds
 - b) is diagnosed by culture in clinical settings
 - c) can be complicated with *Staphylococcus aureus* pneumonia
 - d) is treated with oseltamivir in high-risk patients
 - e) vaccine is given through National Immunization Programme in Sri Lanka
20. Dengue
- a) fever has an incubation period of 1-2 days
 - b) haemorrhagic fever can be differentiated from dengue fever by the presence of haemorrhagic manifestations
 - c) haemorrhagic fever is defined by vascular leakage of plasma
 - d) infection can be excluded by negative NS1 antigen test
 - e) serological test is done after the 5th day of illness
21. Listeriosis
- a) is a zoonotic disease
 - b) is primarily a vector borne disease
 - c) can cause life-threatening infections in immunocompromised patients
 - d) can be transmitted transplacentally to the foetus
 - e) is best treated with doxycycline
22. State whether the following are true or false regarding urethritis.
- a) Acute gonococcal urethritis is mostly asymptomatic in men.
 - b) First-void urine is useful for diagnosing non-gonococcal urethritis.
 - c) Gram stain is highly sensitive for diagnosing chlamydial urethritis.
 - d) Nucleic acid amplification test (NAAT) is the preferred diagnostic test for gonococcal urethritis.
 - e) Doxycycline is the first line antibiotic to treat gonococcal urethritis.

23. State whether the following statements are true or false regarding leprosy.
- a) Leprosy is highly contagious.
 - b) Leprosy is treated with multidrug therapy.
 - c) Leprosy is confirmed by the lepromin test.
 - d) Early diagnosis and treatment reduce the risk of disability.
 - e) The causative organism can be demonstrated by slit-skin smear examination.
24. A 56-year-old man presented with fever and a painful swelling of the left lower leg for three days after sustaining a small abrasion. On examination, the affected area was diffusely erythematous, warm, tender and swollen with poorly defined margins and tender left inguinal lymphadenopathy. State whether the following are true or false regarding the infection in this patient.
- a) *Streptococcus pyogenes* is a common causative organism of this infection.
 - b) The most probable diagnosis is erysipelas.
 - c) Blood cultures are routinely indicated for this infection.
 - d) Diabetes mellitus is a predisposing factor for this infection.
 - e) The infection commonly involves subcutaneous tissue.
25. State whether the following are true or false regarding nocardiosis.
- a) It is caused by aerobic bacteria.
 - b) It can be transmitted from person to person.
 - c) Infection usually results from inhalation of organisms present in soil.
 - d) Patients receiving corticosteroid therapy are at increased risk of developing nocardiosis.
 - e) Penicillin is the drug of choice for the treatment of nocardiosis.
26. A 58-year-old man was admitted with lockjaw, muscle stiffness and generalized spasms for three days. He was alert and had exaggerated reflexes. He had a nail prick injury two weeks ago. He was treated for tetanus. State whether the following are true or false regarding tetanus.
- a) It is caused by a spore forming organism.
 - b) Pathogenesis is due to invasion of the organism into the central nervous system.
 - c) Tetanus infection does not give immunity to reinfection.
 - d) Tetanus is confirmed usually by isolating the causative organism from the wound.
 - e) Penicillin is the antibiotic of choice.
27. Antibiotic prophylaxis for infective endocarditis is indicated before dental procedures that involve manipulation of gingival tissue for patients with
- a) prosthetic heart valve
 - b) rheumatic heart disease
 - c) untreated cyanotic congenital heart defects
 - d) previous infective endocarditis
 - e) a history of acute rheumatic fever

28. A 38-year-old prisoner was admitted with a two-day history of high fever, photophobia and headache. She also had neck stiffness. CSF was collected before starting antibiotics. Her CSF antigen test was positive for *Neisseria meningitidis*. State whether the following are true or false regarding the CSF tests in this patient.

- a) CSF sugar can be low in this patient.
- b) Neutrophil predominance is expected.
- c) CSF Gram stain demonstrates high specificity.
- d) CSF protein is expected to be low in this patient.
- e) CSF PCR is a useful test to confirm this infection.

29. A 11-year-old girl presented with watery diarrhoea, abdominal cramps, fatigue and fever for four days. *Campylobacter* diarrhoea was suspected. *Campylobacter* diarrhoea

- a) is a zoonotic disease
- b) can be transmitted by contaminated water
- c) pathogenesis is due to cytotoxin production
- d) causative organism cannot be cultured in microbiology laboratories
- e) can be complicated by Guillain-Barre syndrome

30. A 13-year-old child admitted with features suggestive of meningitis was started on empirical ceftriaxone and vancomycin after collecting specimens for culture/ABST. Blood culture report received in two days revealed the growth of *Streptococcus pneumoniae*. Part of the antibiotic sensitivity pattern is given below.

Penicillin - S
Ceftriaxone - S
Chloramphenicol - S
Vancomycin - S

State whether the following are true or false regarding the antibiotic treatment of this patient.

- a) Benzyl penicillin should be started as targeted treatment.
- b) Ceftriaxone should be discontinued.
- c) Vancomycin should be continued.
- d) Cefotaxime is a possible alternative for ceftriaxone for the empirical treatment.
- e) Chloramphenicol is one of the first line empirical antibiotics for meningitis.