UNIVERSITY OF JAFFNA, SRI LANKA

SECOND EXAMINATION FOR MEDICAL DEGREES PART (I)

January 2023

2017/2018

Microbiology - Paper I

Date: 24.01.2023 **1.30 pm to 3.00 pm. (1½ hours)**

Answer all 30 questions

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1. Standard precautions
   a) should be followed with all patients in the healthcare system irrespective of their infectious status
   b) are not necessary when transmission based precautions are being followed
   c) include safe sharp management
   d) are not necessary when coming into contact with respiratory secretions of patients
   e) include vaccinating healthcare workers against seasonal flu

2. Infections transmitted by airborne transmission include
   a) measles
   b) pertussis
   c) legionella pneumonia
   d) tuberculosis
   e) diphtheria

3. The normal flora of the female genital tract includes
   a) *E. coli*
   b) *Neisseria meningitidis*
   c) *Lactobacillus* spp.
   d) *Candida albicans*
   e) *Bacteroides* spp.

4. Cell mediated immune response
   a) is a nonspecific immune response
   b) occurs within a day after the primary exposure to a microorganism
   c) is important to fight against typhoid fever
   d) is suppressed in HIV infection
   e) helps to overcome viral infections

5. Protective immunoglobulins
   a) are acquired by newborns through breast milk
   b) is given before exposure to prevent rabies in high risk people
   c) from the mother lasts for about 6-8 months in babies
   d) against rubella infection can be identified by measuring the IgM levels
   e) are given in the treatment of tetanus

6. Type IV hypersensitivity
   a) is an immediate hypersensitivity reaction
   b) is the underlying reason for pulmonary tuberculosis
   c) involves mainly neutrophils
   d) is associated with high level of IgE
   e) is the underlying reason for contact dermatitis

7. Live attenuated vaccines are used to prevent
   a) Japanese encephalitis
   b) meningococcal infections
   c) chickenpox
   d) mumps
   e) tetanus

8. Antibiotics used in the treatment of *Streptococcus pneumoniae* infections are
   a) penicillin
   b) levofloxacin
   c) ceftriaxone
   d) vancomycin
   e) metronidazole

9. Fluconazole
   a) acts on the fungal cell wall
   b) cannot be given orally
   c) penetrates into the CSF well
   d) is useful in the treatment of *Cryptococcus neoformans*
   e) is indicated in resistant candida infection

10. *Campylobacter jejuni* infection is acquired by
   a) eating undercooked poultry
   b) drinking unpasteurized milk
   c) playing with infected pets
   d) aerosol transmission
   e) drinking contaminated water

11. State whether the following are true or false regarding Mucormycosis.
   a) The causative agent can be Rhizopus.
   b) Infection can occur in IV drug abusers.
   c) Infection is acquired by inhalation of fungal spores.
   d) The causative fungi can invade the blood vessels.
   e) Amphotericin B is used in the treatment.

12. *Bacteroides fragilis*
   a) is an anaerobe
   b) is a predominant bacteria of the gut flora
   c) causes peritonitis
   d) can cause lung abscess
   e) is sensitive to gentamicin

13. Extended spectrum beta-lactamase (ESBL) producers
    a) include *Klebsiella pneumoniae*
    b) can cause urinary tract infection
    c) can be transmitted by the hands of healthcare workers in the hospital setting
    d) cannot be diagnosed in the routine microbiology laboratories
    e) can be treated with carbapenems

14. Rotavirus
    a) is a common cause of severe diarrhoea in infants
    b) survives for several days in water
    c) can be transmitted by contaminated hands
    d) has an incubation period of 1 – 6 hours
    e) diarrhoea is routinely confirmed in clinical microbiology laboratories

15. Congenital rubella syndrome
    a) risk is more when the mother gets the infection after the 20th week of gestation
    b) can present with jaundice
    c) infection can be diagnosed by the detection of rubella-specific IgM antibodies in the baby
    d) can cause cataract
    e) is prevented by the vaccine given in the National Immunization Programme in Sri Lanka

16. Influenza virus
    a) 'seasonal flu' is due to antigenic shift
    b) is transmitted by person to person contact through respiratory droplets
    c) infection is more severe in elderly
    d) infection is treated with oseltamivir in severe cases
    e) 'seasonal flu' could be prevented by giving vaccine annually to the risk group

17. Polio virus
    a) is an enterovirus
    b) is mainly transmitted by respiratory droplets
    c) can cause aseptic meningitis
    d) is an important cause of gastroenteritis in children
    e) causes the disease by producing toxin

18. Measles virus
    a) has only one serotype
    b) infection has an incubation period of 10 – 12 days
    c) infection begins with a prodrome of runny nose and conjunctivitis
    d) infection can be complicated by otitis media
    e) infection is prevented by live attenuated vaccine

19. Viruses that cause encephalitis include
    a) Herpes simplex virus
    b) West Nile virus
    c) Calicivirus
    d) Cytomegalovirus
    e) Varicella zoster virus

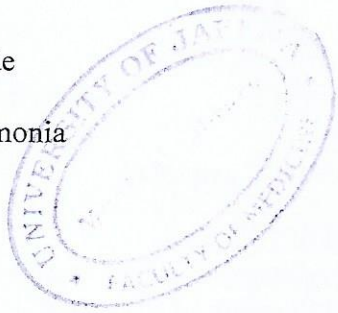
20. State whether the following are true/false regarding the malignant disease and the associated oncogenic virus.
    a) Cervical carcinoma - Human papillomavirus
    b) Nasopharyngeal carcinoma - Epstein-Barr virus
    c) Burkitt's lymphoma - Hantavirus
    d) Kaposi's sarcoma - Herpes simplex virus
    e) Hepatocellular carcinoma – Hepatitis A

21. Generalized maculopapular rash is seen in
    a) measles
    b) scrub typhus
    c) dengue
    d) zika viral fever
    e) human herpes virus 6 infection

22. Bronchiolitis
    a) is mainly caused by parainfluenza virus
    b) causative agent can be transmitted by the hands of healthcare workers in hospitals
    c) causative agent is routinely confirmed in the clinical setting by serological tests
    d) is treated with an antiviral agent
    e) is prevented by giving vaccine

23. Leptospirosis
    a) is transmitted by person to person contact
    b) mainly affects farmers in Sri Lanka
    c) can lead to acute renal failure
    d) is best diagnosed by dark field microscopy
    e) can be treated with penicillin

24. Zoonotic diseases include
    a) brucellosis
    b) pneumococcal pneumonia
    c) erysipelas
    d) salmonellosis
    e) Pontiac fever



25. A two-year-old child developed cluster of blisters around the nose and lips which were oozing and then formed brown-yellowish (honey coloured) crusts. State whether the following are true/false regarding this infection.
    a) The most possible diagnosis is impetigo.
    b) The causative bacterium is *Staphylococcus aureus*.
    c) This infection is transmitted from person to person through contact.
    d) Main pathology is in the subcutaneous tissue.
    e) Antibiotics are contraindicated for this infection.

26. A ten-year-old child presented with blood and mucous diarrhea around 10 - 15 times a day. She passed very small volume stools and also had tenesmus. Shigellosis was suspected. State whether the following are true or false regarding shigellosis.
    a) It is a zoonotic disease.
    b) Shigellosis has a high infective dose.
    c) Stool culture is not necessary when shigellosis is suspected.
    d) Pathogenesis is due to invasion by the organism.
    e) Antibiotic can be useful in this patient.

27. State whether the following are true/false regarding dengue hemorrhagic fever (DHF).
    a) It is transmitted by *Aedes aegypti* mosquito.
    b) DHF occurs more during primary infection than in subsequent infections.
    c) Pathophysiological hallmark of DHF is plasma leakage.
    d) Pathogenesis is attributed to both viral and host factors.
    e) It can be prevented by vaccine.

28. Scrub typhus
    a) is caused by *Orientia tsutsugamushi*
    b) is common in the central part of Sri Lanka
    c) vector is barely visible to the naked eye
    d) has an incubation period of 1-3 days
    e) is treated with doxycycline

29. State whether the following are true/false regarding renal tuberculosis.
    a) The causative organism is *Mycobacterium smegmatis*.
    b) Patients acquire the causative bacteria commonly by inhalation.
    c) Characteristic pathology is granuloma formation.
    d) Cough is a common feature.
    e) Urine microscopy for acid fast staining is useful.

30. A 55-year-old man was admitted with left sided flank pain, fever, dysuria, haematuria and vomiting. His urine full report revealed field full of pus cells. State whether the following are true/false regarding this patient.
    a) Most possible diagnosis is acute pyelonephritis.
    b) *E. coli* is the common causative organism.
    c) Urine culture should be done in this patient.
    d) Blood culture is not necessary in this patient.
    e) Antibiotic should be given for 14 days.