

**THE DEGREE OF BACHELOR OF MEDICINE AND
BACHELOR OF SURGERY
LEVEL III**

MEDICAL MICROBIOLOGY

**CONTINUOUS ASSESSMENT TEST
Multiple Choice Questions (MCQ) Paper**

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DATE: 12th October 2016

TIME: 09.00AM-10.00AM

INSTRUCTIONS

- Read the following instructions carefully.
- Put your Student identification number on each page.
- There is only one correct answer to each question.
- Circle the correct response.
- If you change your answer, do so clearly by crossing the previously marked response with an (X).
- Answer ALL questions.

8. Which of the following is a non-motile protozoan?

- a. *Cryptosporidium parvum*
- b. *Leishmania donovani*
- c. *Giardia lamblia*
- d. *Balantidium coli*
- e. *Entamoeba histolytica*

9. Microfilaria of *Loa loa* are best detectable in blood at

- a. 8pm to 8am
- b. 2am to 8am
- c. 8pm to 2am
- d. 8am to 8pm
- e. None of the above

10. Which of the following drugs is useful in the treatment of Onchocerciasis?

- a. Praziquantel
- b. Metronidazole
- c. Suramin
- d. Ivermectin
- e. Nitazoxanide

11. Which of the following is NOT true regarding *Wuchereria bancrofti*?

- a. Microfilariae are sheathed ✓
- b. Microfilariae typically exhibit nocturnal periodicity ✓
- c. Infection may present with wheezing ✓
- d. May be treated using praziquantel.
- e. May be transmitted by *Culex* mosquitoes ✓

12. Which of these parasites is NOT routinely diagnosed by examining blood for microfilariae

- a. *Mansonella perstans*
- b. *Loa loa*
- c. *Onchocerca volvulus*
- d. *Wuchereria bancrofti*
- e. *Brugia malayi*

13. Which of these parasites have sheathed microfilariae?

- a. *Wuchereria bancrofti* and *Onchocerca volvulus*
- b. *Brugia malayi* and *Onchocerca volvulus*
- c. *Loa loa* and *Onchocerca volvulus*
- d. *Loa loa* and *Brugia malayi*
- e. *Wuchereria bancrofti* and *Mansonella perstans*

14. Which of these statements is NOT true regarding *Trichomonas vaginalis*

- a. It is largely transmitted sexually ✓
- b. Albendazole is the drug of choice for treatment of infection ✓
- c. Only exists in a trophozoite stage ✓
- d. Infection may present with pruritus of the vagina ✓
- e. Consistent use of condom is an effective control method ✓

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15. *Giardia lamblia* is:
- a. A flagellated protozoa
 - b. A ciliated protozoa
 - c. An amoebae
 - d. A bacteria
 - e. A non-motile protozoa
16. Which of these sequential stages is true for *Plasmodium falciparum*
- a. Sporozoite > liver schizonts > merozoites > trophozoites
 - b. Sporozoites > trophozoites > liver schizonts > merozoites
 - c. Sporozoites > gametocytes > liver schizonts > merozoites
 - d. Sporozoites > liver schizonts > merozoites > oocysts
 - e. Sporozoites > erythrocytic schizonts > merozoites > gamtocytes
17. Which of these are useful in treating infection with severe *Plasmodium falciparum* malaria in Kenya
- a. Quinine or Mefloquine
 - b. Quinine or Artesunate
 - c. Quinine or Chloroquine
 - d. Quinine or Amodiaquine
 - e. Quinine or Primaquine
18. Which of the following is NOT true regarding *Babesia* parasites?
- a. They are non-motile
 - b. They are transmitted by ticks
 - c. Metronidazole is useful for treating infected individuals
 - d. Diagnosis is made by examining Gram stain blood smears.
 - e. Infection may present with anaemia
19. Which of these is NOT useful in diagnosing *Giardia lamblia* infection?
- a. Identification of cysts in stool
 - b. Identification of trophozoites in string test
 - c. Identification of trophozoites in duodenal aspirate
 - d. Identification of trophozoites in small intestine biopsy
 - e. None of the above
20. Which of these parasites have hypnozoites?
- a. *Plasmodium ovale* and *Plasmodium falciparum*
 - b. *Plasmodium ovale* and *Plasmodium malariae*
 - c. *Plasmodium ovale* and *Plasmodium vivax*
 - d. *Plasmodium vivax* and *Plasmodium falciparum*
 - e. *Plasmodium vivax* and *Plasmodium malariae*
21. Sparganosis is caused by?
- a. Cestodes
 - b. Nematodes
 - c. Trematodes.
 - d. Arthropods
 - e. None of the above

22. Which of the following are features not associated with *Trichomonas vaginalis* infection?

- a. Vaginitis
- b. Dysuria in males
- c. Foul smelling discharge in females ✓
- d. Lower abdominal pain ✓
- e. Specific urethritis in males ✓

23. Skin biopsy may be useful in the diagnosis of which of the following parasites?

- a. *Isospora hominis*
- b. *Onchocerca volvulus*
- c. *Trichinella spiralis*
- d. *Trypanosoma cruzi*
- e. *Taenia solium*

24. Which of the following is a ciliated protozoa?

- a. *Giardia lamblia*
- b. *Dientamoeba fragilis*
- c. *Balantidium coli*
- d. *Trichomonas hominis*
- e. *Toxoplasma gondii*

25. Which of the following is not a food-borne parasite?

- a. *Balantidium coli*
- b. *Ascaris lumbricoides*
- c. *Ancylostoma duodenale*
- d. *Sarcocystis lindermanni*
- e. *Entamoeba histolytica*

26. Which of the following drugs is recommended for treatment of infection with *Taenia saginata*?

- a. Albendazole
- b. Mebendazole
- c. Praziquantel
- d. Ivermectin
- e. Diethylcarbamazine

27. Ground itch is commonly associated with infections with?

- a. *Necator americanus*
- b. *Schistosoma mansoni*
- c. *Phlebotomus martini*
- d. *Toxocara canis*
- e. *Fasciola hepatica*

28. Which of the following parasites is NOT associated with intestinal obstruction?

- a. *Ascaris lumbricoides*
- b. *Entamoeba histolytica*
- c. *Schistosoma mansoni*
- d. *Ancylostoma duodenale*
- e. *Trichuris trichiura*

29. Which of the following parasites is associated with perianal itching?
- a. *Strongyloides stercoralis*
 - b. *Enterobius vermicularis*
 - c. *Trichuris trichiura*
 - d. *Necator americanus*
 - e. *Schistosoma haematobium*
30. Which of the following is an effective vector of *Yersinia pestis*?
- a. *Pediculus humanus*
 - b. *Xenopsylla cheopis*
 - c. *Phlebotomus martini*
 - d. *Anopheles merus*
 - e. *Glossina swynnertoni*
31. Microcytic hypochromic anemia can occur as a complication of the following?
- a. *Ascaris lumbricoides*
 - b. *Enterobius vermicularis*
 - c. *Trichuris Trichura*
 - d. *Strongyloides stercoralis*
 - e. *Necator Americanus*
32. Cyclops is an intermediate host of which of the following?
- a. *Taenia Saginata*
 - b. *Taenia Solium*
 - c. *Hymenolepis nana*
 - d. *Dracunculus medinensis*
 - e. *Hymenolepis diminuta*
33. Man is an intermediate host of which of the following?
- a. *Diphyllobothrium latum*
 - b. *Taenia Saginata*
 - c. *Ascaris lumbricoides*
 - d. *Echinococcus granulosus*
 - e. *Hymenolepis diminuta*
34. Culicoides is a vector of which of the following?
- a. *Wuchereria bancrofti*
 - b. *Brugia Malagi*
 - c. *Onchocerca volvulus*
 - d. *Mansonela species*
 - e. *Druncunculus medinensis*
35. Consumption of crab meat can lead to infection of which one of the following parasites?
- a. *Diphyllobothrium latum*
 - b. *Taenia saginata*
 - c. *Onchocerca Volvulus*
 - d. *Paragonimus westamanii*
 - e. *Taenia saginata*

36. Swimming has been associated with infection of which of the following?

- a. *Entamoeba histolytica*
- b. *Balantidium coli*
- c. *Naegleria fowleri*
- d. *Plasmodium species*
- e. *Entedolimux nana*

37. Transplacental transmission can occur in which of the following?

- a. *Isospora Belli*
- b. *Blasocystis hominis*
- c. *Cacocystis species*
- d. *Toxoplasma gondii*
- e. *Pneumocystis carinii*

38. Complications of *Schistosoma haematobium* infection include:

- a. Hydronephrosis
- b. Hepatoma
- c. Haemolytic anaemia
- d. Intestinal obstruction
- e. None of the above

39. Which of the following can cause atypical pneumonia?

- a. *Isospora belli*
- b. *Blastocystis hominis*
- c. *Cacocystis species*
- d. *Toxoplasma gondii*
- e. *Pneumocystis carinii*

40. Sodium stibogluconate is useful in the treatment of which of the following?

- a. *Trypanasoma gambiense*
- b. *Trypanasoma rhodensie*
- c. *Trypanasoma cruzi*
- d. *Leishmania donovani*
- e. *Trypanasoma rangeli*

41. True about diphtheria toxin

- a. A heat-labile polypeptide
- b. Ability to produce toxin is acquired through transformation *subin*
- c. Produced by all strains of *Corynebacterium diphtheriae* †
- d. The active domain inhibits protein synthesis
- e. *In vivo* tests for toxin production include the Elek test

42. False concerning the pathogenesis of *Shigella dysenteriae*

- a) Taken up by the M cells in intestinal mucosa of duodenum and ileum ✓
- b) Actively induces macrophage apoptosis ✓
- c) Shigatoxin inhibits protein synthesis ✓
- d) Taken up by enterocytes via retrograde transport ✓
- e) Metastatic infection rarely occurs ✓

43. *Brucella* species

- a. Have a high infectious dose ✓
- b. Commonest mode of transmission to humans is via droplets ✓
- c. Obligate anaerobes ✓
- d) Macrophages are their prime targets ✓
- e. Amoxicillin-clavulanic acid is the drug of choice ✓

44. Virulence factors of *Yersinia pestis* include all the following **except**

- a. Capsule ✓
- b. Somatic Antigen Complex ✓
- c. Ability to absorb iron ✓
- d. Endotoxin production ✓
- e) IgA₁ protease ✓

45. A general characteristic of actinomycetes

- a. Gram negative ✓
- b. Motile ✓
- c. Have large polysaccharide capsules ✓
- d) Form spores in nutritionally deficient media ✓
- e. Some members of the group are weakly acid fast ✓

46. In the pathogenesis of *Rickettsia*

- a) Enter host through passive endocytosis ✓
- b. Exit phagosome before phagolysosomal fusion ✓
- c. Proliferate in the lysosome ✓
- d. Spotted fever group rickettsiae move intercellularly by lysis ✓
- e. Induce apoptosis of the host cell ✓

47. False about *Coxiella burnetii*

- a. Gram-negative coccobacilli ✓
- b. Obligate intracellular bacteria ✓
- c) Small cell variant(SCV) multiplies in the host monocytes and macrophages ✓
- d. Able to survive inside acidic lysosomes ✓
- e. Doxycycline is the drug of choice ✓

48. True about *Haemophilus ducreyi*

- a) Transmission is by droplet inhalation ✓
- b) Causes a painless ulcer ✓
- c) Only requires the V factor for growth ✓
- d) Metronidazole is the drug of choice ✓
- e) Fastidious and requires a special nutritive ✓

49. False about *Bacillus anthracis*

- a. Gram-positive spore-forming rods
- b. Non-motile
- c. Capsulated in tissues
- d. Strict anaerobe
- e. Catalase positive

50. Not useful in the laboratory diagnosis of *Haemophilus influenzae*

- a) Neutral red
- b) *Staphylococcus aureus*
- c) Malachite green
- d) Candle extinction jar
- e) Crystal violet

51. Causative agent of endemic syphilis

- a. Is transmitted from domestic animals to humans
- b. Is transmissible through contact with contaminated items
- c. Resistant to penicillin
- d. Culturable in enriched liquid media
- e. Is associated with false negative Rapid plasma regain test

52. Species of *Aspergillus* are associated with

- a. Birds and bats droppings
- b. Thermal dimorphism
- c. Tuberculate macroconidia
- d. Vesicle
- e. Pseudohyphae formation

53. Bacterial growth atmospheric requirement achieved in the candle extinction jar is suitable for growth of the following except

- a. *Haemophilus ducreyi*
- b. *Campylobacter jejuni*
- c. *Neisseria gonorrhoeae*
- d. *Haemophilus influenzae*
- e. *Bacteroides fragilis*

54. Genital ulcer disease which is not commonly associated with inguinal lymph node enlargement is associated with

- a. *Chlamydia trachomatis* serotype L
- b. *Klebsiella granulomatis*
- c. *Gardnerella vaginalis*
- d. *Ureaplasma urealyticum*
- e. *Treponema pallidum pallidum*

55. Organism classified as non-halophilic vibrio is

- a. *Vibrio vulnificus*
- b. *Vibrio alginolyticus*
- c. *Vibrio parahaemolyticus*
- d. *Vibrio mimicus*
- e. *Vibrio cholerae*

56. Screening serological tests for syphilis include
- a. *Treponema pallidum* haemagglutination assay
 - b. Schick test
 - c. Venereal disease research laboratory test
 - d. *Treponema pallidum* immobilization test
 - e. Ligase chain reaction
57. Genus which consists of Gram's stain negative anaerobic bacilli is
- a. *Fusobacterium* +
 - b. *Veillonella*
 - c. *Helicobacter* - facultative
 - d. *Listeria* +
 - e. *Bacillus* +
58. Which one does not apply to systemic mycoses
- a. Inhalation of fungal spores
 - b. Amphotericin B
 - c. Exoantigen test
 - d. Carbohydrate assimilation tests
 - e. Latex agglutination test
59. Disease development by *Helicobacter pylori* is enhanced by
- a. Urease enzyme activity
 - b. Adenylate cyclase activity
 - c. Impairment of blood supply to infected tissues
 - d. Lecithinase activity
 - e. Effects of gelatinase enzyme
60. Laboratory investigation of *Campylobacter jejuni* infection in humans includes
- a. Stool inoculation in Alkaline peptone water
 - b. Incubation of cultures in Fildes-MacIntosh jar
 - c. Detection of antibodies in serum
 - d. Urine examination
 - e. Blood culture
61. The following can be used as indicator organisms for excreta pollution of water except
- a. *E. coli*
 - b. *Enterobacter*
 - c. *Enterococci*
 - d. *Citrobacter*
 - e. *Corynebacteria*
62. A false statement on the Eijkmann test used in water analysis
- a. It is a non-differential test
 - b. Uses McConkey media
 - c. Incorporates a Durham tube
 - d. The test is incubated at 44°C
 - e. Specific for thermo tolerant *E. coli*

63. Chlamydomphila species
- a. Can replicate extracellularly ✓
 - b. Contain DNA only ✓
 - c. Contain RNA only ✓
 - d. Replicate by binary fission
 - e. Can synthesize ATP
64. The following feature can be seen in the various stages of trachoma disease except
- a. Presence of follicles and inflammation under the eye lid
 - b. Formation of scar tissue
 - c. Excessive tearing and bleeding
 - d. In-turning of the eyelids
 - e. Corneal scarring
65. Differential media used in bacteriology includes
- a. Blood agar
 - b. Nutrient agar
 - c. Muller Hinton Agar
 - d. Thayer Martin agar
 - e. Salmonella Shigella agar
66. The following specimen is normally sterile
- a. Throat swab
 - b. Urethral swab
 - c. Suprapubic urine specimen
 - d. Stool
 - e. Skin scrapings
67. Causative agents of trachoma can be transmitted to humans through
- a. Fecal oral route
 - b. Body louse
 - c. Cat scratch
 - d. Dog bite
 - e. House flies
68. Characteristics of mycoplasmas include
- a. Inability to grow on artificial media
 - b. Lack of a cell wall
 - c. Susceptibility to penicillin
 - d. Requirement of cell culture line from primary isolation
 - e. Resistance to all antibacterial antimicrobial agents
69. A false statement on urinary tract infections
- a. *E. coli* is a predominant causative agent of bacterial UTIs ✓
 - b. Polymicrobial infections are common in patients with structural abnormalities
 - c. The bladder is fairly resistant to colonization due to the wide array of present commensals
 - d. Coagulase negative staphylococci are a common cause of urinary tract infection among sexually active women
 - e. *E. coli* causes UTI predominantly by the ascending route ✓

70. Toxigenic infection of *Staphylococcus aureus*

- a. Mastitis
- b. Blepharitis
- c. Food poisoning
- d. Septic arthritis
- e. Flaccid paralysis

71. Which of the following does not affect a person's susceptibility to tuberculosis?

- A) Nutritional status
- B) Genetics
- C) Access to medical care
- D) Status of immune system
- E) Type of job

72. The specific infection sites that develop in primary tuberculosis are known as what?

- A) Fibroblasts
- B) Necrotic lesions
- C) Tubercles
- D) Caseous lesions
- E) Scars

73. How is *Mycobacterium leprae* cultured in the laboratory?

- A) It is grown on minimal media.
- B) It cannot be grown in the lab.
- C) It is grown using human tissue cultures.
- D) It is grown on complex media.
- E) It is a fastidious organisms that requires a variety of special conditions for growth.

74. Which is not a clinical manifestation of lepromatous leprosy?

- A) Many bacilli are present in lesions.
- B) Numerous deep lesions are concentrated in cooler areas of the body.
- C) Mutilation of the extremities is common.
- D) No skin nodules are present.
- E) Patients are not reactive to lepromin.

75. Primary infections caused by *Streptococcus pyogenes* are due to the organisms invading what two body sites?

- A) Nose and vagina
- B) Skin and eyes
- C) Eyes and gastrointestinal tract
- D) Mouth and urethra
- E) Skin and throat

76. What test allows for the differentiation of Group A streptococci from other -hemolytic streptococci?

- A) CAMP test
- B) Hippurate hydrolysis
- C) Esculin hydrolysis
- D) Bacitracin sensitivity
- E) Growth in 6.5% salt

77. What is the major virulence factor of *Streptococcus pneumoniae*?

- A) M protein
- B) Pyogenic exotoxins
- C) Capsule
- D) DNase
- E) Hyaluronidase

78. A positive indole test indicates cleavage of indole from what substrate?

- A) Lactose
- B) Glucose
- C) Tyrosine
- D) Tryptophan
- E) Sucrose

79. Why does urea medium turn pink during a positive reaction?

- A) The organism ferments lactose to acidic end-products which then lower the pH of the medium.
- B) The organism can utilize citrate as a carbon source and releases carbon dioxide which then combines with water and sodium to produce sodium carbonate and raises the pH of the medium.
- C) The organism produces urease, which accumulates and lowers the pH of the medium.
- D) The organism cannot grow in the presence of bile salts.
- E) The organism produces urease that cleaves urea into ammonium which then raises the pH of the medium.

80. What is the reservoir for *Escherichia coli* O157:H7?

- A) Humans
- B) Cattle
- C) Soil
- D) Wild rodents
- E) Ameba

81. This virologic test is used for studying RNA

- a. Western blot
- b. Southern blot
- c. Northern blot
- d. Eastern blot
- e. Immunofluorescence assay (IFA)

82. Recent viral infections are usually associated with laboratory detection of

- a. IgM
- b. IgG
- c. IgA
- d. IgE
- e. IgC

83. With a case-fatality rate of 10%, this virus epidemic occurred in S.E. Asia in 2002/2003 and is believed to have originated from horseshoe bats

- a. Swine flu
- b. Avian flu
- c. SARS
- d. Mad cow disease
- e. Human flu

84. Virus particles are known to have pentons and hexons as unique characteristics and two types are associated with gastroenteritis – which viruses are these?

- a. Rotaviruses
- b. Rabies viruses
- c. Herpesviruses
- d. Polioviruses
- e. Adenoviruses

85. "Swimming pool" conjunctivitis is associated with infection with this virus

- a. HSV
- b. Measles virus
- c. Calicivirus
- d. Adenovirus
- e. HHV-6

86. Burkitt's lymphoma (BL) is caused by this virus

- a. An alpha-herpesvirus
- b. A beta-herpesvirus
- c. A gamma-herpesvirus
- d. A delta-herpesvirus
- e. An epsilon-herpesvirus

87. The virus associated with causation of cervical cancer is

- a. An RNA virus
- b. A ssDNA virus
- c. A dsRNA virus
- d. Blood transmitted
- e. Sexually-transmitted

88. Antigenic shift is likely to occur with these viruses

- a. Influenza type B virus
- b. Retroviruses
- c. Parainfluenza viruses
- d. Parvoviruses
- e. Rotaviruses

63
74

89. Nasopharyngeal carcinoma is caused by this virus

- a. HHV-1
- b. HHV-2
- c. HHV-3 HSV
- d. HHV-4
- e. HHV-5 CMV

90. Adult-T cell leukemia is caused by a virus classified by Baltimore classification system as group

- a. Two
- b. Three
- c. Four
- d. Five
- e. Six

DCD
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1
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91. Acyclovir is a drug of choice for

- a. Alpha-herpesviruses
- b. Beta-herpesviruses
- c. Gamma-herpesviruses
- d. Delta-herpesviruses
- e. Epsilon-herpesviruses

92. An example of a viral oncogene (v-onc) linked to degradation of tumor suppressor p53 in cervical cancer is

- a. V-src
- b. E6
- c. E7
- d. A2
- e. p24

93. Hepatitis viruses associated with causation of acute hepatitis ONLY are transmitted via

- a. Blood
- b. Urine
- c. Vertically
- d. Aerosol
- e. Fecal-orally

94. The most common virus associated with infant gastroenteritis is

- a. Adenovirus 40
- b. Calicivirus
- c. Norovirus
- d. Rotavirus
- e. Poliovirus

95. Hepatitis C can be transmitted through the following except

- a. Feco-oral route
- b. Sexual intercourse
- c. Sharing needles
- d. Blood transfusion
- e. Needle pricks

96. One of the following groups of viruses is most likely to be transmitted via ingestion

- a. Enveloped viruses
- b. Naked viruses
- c. All RNA viruses
- d. All DNA viruses
- e. Segmented viruses

97. The following are causes of respiratory infection except

- a. Orthomyxoviridae
- b. Paramyxoviridae
- c. Togaviridae
- d. Coronaviridae
- e. Reoviridae

98. One of the following drugs is used to treat both hepatitis B and HIV

- a. Lamivudine
- b. Zidovudine
- c. Adefovir
- d. Acyclovir
- e. Ribavirin

99. HIV

- a. Has a segmented genome
- b. Is non-enveloped
- c. Replicates in the nucleus
- d. Is a double-stranded RNA virus
- e. Is in the family Reoviridae

100. The following viruses are zoonotic except

- a. Yellow fever virus
- b. Rotavirus
- c. Hepatitis B virus
- d. Rift Valley fever virus
- e. Influenza virus