



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

SUPPLEMENTARY/SPECIAL EXAMINATIONS
SECOND YEAR EXAMINATION FOR THE AWARD OF THE DEGREE
BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (MBCHB)
END OF YEAR SUPPLEMENTARY/SPECIAL EXAMINATION
[2021/2022 ACADEMIC YEAR]

MEDS 222: MEDICAL MICROBIOLOGY I

STREAM: Y2 S2

TIME: 2 HOURS

DAY: TUESDAY, 9:00 – 12: 00 P.M.

DATE: 26/04/2022

INSTRUCTIONS

- 1. Do not write anything on this question paper.**
- 2. Attempt ALL questions.**

1. Which fungi that produce Ergot that has been found to possess medically important alkaloids
 - A. *Saccharomyces cerevisiae*
 - B. *Claviceps purpurea*
 - C. *Leptolegnia caudate*
 - D. *Aphanomyces laevis*
2. The following facts are true about the composition of the fungi cell wall except
 - A. Mannoproteins
 - B. Aalpha& beta-glucans
 - C. N- acetylglucosamine
 - D. N-acetylmuramic acid
3. Among the following which one is not a feature of zygomycetes hyphae
 - A. Hyphae are dikaryotic
 - B. Hyphae are coenocytic
 - C. Their hyphae is mostly aseptate
 - D. None of the above

4. Identify this type of hyphae



- A. Favic chandelier
 - B. Nodular organ
 - C. Racquet hyphae
 - D. Pectinate body
5. Among the following examples of fungi which one is not a saprophyte
- A. *Rhizopus sp.*
 - B. *Penicillium sp.*
 - C. *Puccinia sp.*
 - D. *Aspergillus sp.*
6. Among the following features which one is true about Gametangial Contact?
- A. Found in many lower fungi
 - B. Involve the fusion of two naked gametes.
 - C. One or both gametes are motile, motile gametes are known as planogametes.
 - D. They possess heterogametes
7. Among the following is the fluorescent dye that is commonly used in fungal identification/staining.
- A. *Masson-Fontana stain*
 - B. *Meyer mucicarmine stain*
 - C. *Calcofluor white stain*
 - D. *Gomori's methenamine silver nitrate (GMS) stain*
8. Which specialized culture media can be used in isolation of *Histoplasma capsulatum*?
- A. Caffeic Acid Agar
 - B. Birdseed Agar
 - C. Sabhi Medium
 - D. Brain Heart Infusion Agar
9. Among the following fungal strains which one is not a dimorphic fungi
- A. *Histoplasma capsulatum*
 - B. *Phaeoannellomyceswerneckii*
 - C. *Blastomyces dermatidis*
 - D. *Paracoccidioidesbrasiliensis*
10. How are the spores formed by asexual reproduction of fungi called
- A. Zygotes
 - B. Meiospores
 - C. Mitospores
 - D. None of the above
11. Which of the following is true about fungal toxins

- A. They are essential for fungal growth
 - B. They are secondary metabolites produced by fungi
 - C. They are not essential for fungal reproduction
 - D. They are only toxic to humans but not plants and animals
12. The following are the adhesion molecules does pathogenic fungi use to bind to the epithelium of mammalian cells
- A. Als proteins
 - B. Exopolysaccharides
 - C. Eap1p
 - D. Hwp1p molecules
13. *C. albicans* uses which enzyme to resist oxidation
- A. Keratinase
 - B. Superoxide dismutase
 - C. Collagenase
 - D. Phospholipases
14. Fungi are different from plants because
- A. They lack organelles
 - B. They are unable to fix CO₂
 - C. They are osmotrophic
 - D. They are autotrophs
15. What are the vegetative mycelium
- A. Submerged mycelium
 - B. Aerial mycelium
 - C. Fertile mycelium
 - D. Embedded mycelium
16. Which of the following is not true with superficial mycoses
- A. They are usually confined to the outer layers of skin, hair, and nails.
 - B. They cause little or no inflammatory response
 - C. The fungi are also called keratinophilic fungi
 - D. They most commonly occurring mycoses in the temperate regions
17. Among the following which characteristic is false about the Tinea manus condition
- A. It is characterized by a round or oval rash
 - B. Dry scaly lesions may involve one or both feet
 - C. The rash may be mild to moderately itchy, causing some discomfort.
 - D. If the rash is there for a long time the skin may become discolored.
18. Which of the following features describes well the white piedra condition
- A. Its nodules feel hard and vary in size to as large as a few millimeters in diameter.
 - B. Mainly affects the scalp hair.
 - C. Its nodules are formed consisting of masses of pigmented hyphae.
 - D. They can be easily detached from the hair shaft.
19. The following facts are true about *Malassezia sp.* except

- A. It causes a highly prevalent superficial infection of the stratum corneum
 - B. The pathogen is a lipophilic yeast
 - C. The isolate is considered only to be pathogenic.
 - D. Can be isolated from normal skin and scalp
20. Which one of the following is an example of the geophilic fungi
- A. *Microsporum gypseum*
 - B. *Trichophyton violaceum*
 - C. *Epidermophyton floccosum*
 - D. *Microsporum canis*
21. Which of the following is false about the *Microsporum sp.*
- A. They produce microconidia
 - B. They do infect the skin, hair, and rarely nails
 - C. The prevalence of infection has decreased significantly in recent years
 - D. This organism could be easily identified on the scalp because infected hairs fluoresce a bright green colour when illuminated with a UV-emitting Wood's light.
22. Which of the following is not a characteristic of Pityriasis versicolor infection
- A. The infection is characterized by discrete, serpentine (of or resembling serpent in form), hyper- or hypopigmented maculae (small spot) that develop on the skin
 - B. The maculae usually develop on the head and lower extremities.
 - C. These patches of discoloured skin may enlarge and coalesce (Fuse or cause to grow together)
 - D. These patches scaling, inflammation and irritation is minimal
23. The following pathogens do cause actinomycetes in humans except
- A. *Streptomyces madurae*
 - B. *Nocardia brasiliensis*
 - C. *Actinomadura pelletieri*
 - D. *Madurella grisea*
24. Among the following samples which one is the most preferred for Madura foot condition laboratory diagnosis
- A. Mucopus
 - B. Blood
 - C. Skin scrapings
 - D. None of the above
25. Which of the following is not a form of Rhinosporidiosis
- A. Skeletal rhinosporidiosis
 - B. Ocular rhinosporidiosis
 - C. Cutaneous rhinosporidiosis
 - D. Pharyngeal rhinosporidiosis
26. Which one of the following is false about the Chromoblastomycosis condition
- A. It is a chronic form of skin infection

- B. It is caused by a melanized fungi
 - C. Produces lesions that appear as papules that develop into scaly, wart-like structures that affect mostly the hands and chest.
 - D. Fully developed lesions have been likened to the tips of a cauliflower.
27. Which of the following pathogens is not a causative agent of chromoblastomycosis
- A. *Phialophorapedrosoi*
 - B. *Phialophora compactum*
 - C. *Cladosporium carrionii*
 - D. *Periellidium boydii*
28. *Sporothrix schenckii* is one of the pathogenic fungi that has the following characteristics except
- A. It is a monomorphic fungus
 - B. It causes sporotrichosis
 - C. The mould, which grows in cultures incubated at 25°C, is presumably the infectious form in nature.
 - D. This fungus is a ubiquitous saprophyte
29. Which of the following is not a form of rhinosporidiosis
- A. Skeletal form
 - B. Pharyngeal rhinosporidiosis
 - C. Cutaneous form
 - D. Ocular form
30. Among the following which is not true about systemic mycoses
- A. Systemic mycoses are caused by fungi of soil
 - B. They are primarily caused by traumatic inoculation spores through the skin.
 - C. After fungi spores can reach to the lung
 - D. They are caused by dimorphic fungi
31. Which is the infective stage of blastomycosis
- A. Macroconidia
 - B. Pseudohyphae
 - C. Yeast form
 - D. Microconidia
32. Among the following which is the raremost symptom that can be observed in individuals suffering from blastomycosis especially if they are not immunocompromised
- A. Brain abscess
 - B. Osteomyelitis
 - C. Meningitis
 - D. Asymptomatic prostatitis
33. Which one of the following symptoms are not associated with pulmonary histoplasmosis
- A. Myalgia
 - B. Lymphadenopathy
 - C. Haemoptysis

- D. Dyspnea
34. Lutz–Splendore–Almeida disease is caused by which fungi
- A. *H. duboisii*
 - B. *B. dermatitidis*
 - C. *P. brasiliensis*
 - D. *C. immitis*
35. The following characteristics are true about the desert rheumatism condition except
- A. Its causative agent is primarily found in Africa more so the sub-Saharan region
 - B. Its causative agent produces spherule
 - C. More than half of its cases are asymptomatic.
 - D. Pulmonary infection is the most frequent presentation in symptomatic patients.
36. Which of the following characteristics is false about Moniliasis condition
- A. It is caused by members of the normal flora of the skin, mucous membranes, and gastrointestinal tract.
 - B. Causative agents known to colonize the mucosal surfaces
 - C. The causative agents are true opportunistic pathogens
 - D. The causative agents mainly cause systemic mycoses
37. Which of the following virulence traits that are not produced by *C. albicans*
- A. Adhesins production
 - B. Urases production
 - C. Aspartyl proteinases and serine proteinases production
 - D. They produce Glycoprotein extracts that are pyrogenic in nature.
38. *C. neoformans* causes the following conditions except
- A. Pulmonary cryptococcosis.
 - B. Ocular cryptococcosis.
 - C. CNS cryptococcosis.
 - D. Disseminated non pulmonary non-CNS cryptococcosis
39. Which stain is commonly used to demonstrate the presence of capsules in *C. neoformans*
- A. Masson-Fontana stain
 - B. Periodic Acid-Schiff (PAS) stain
 - C. Indian ink
 - D. Haematoxylin and Eosin stain
40. Which one of the following characteristics is not true about aspergillosis
- A. Aspergillosis refers to the non-invasive and non-allergic disease caused by a hyaline mould named *Aspergillus*
 - B. *Aspergillus* species are ubiquitous saprophytes in nature. and

- C. Aspergillosis occurs worldwide.
 D. There are more than 100 species of *Aspergillus* but only a few have been implicated in human disease.
41. Phylum protozoa hasclasses.
 A. Two
 B. Three
 C. Four
 D. None of the above
42. Which of the following is **Intestinal parasite**.
 A. Entamoeba
 B. Naegleria
 C. Acanthamoeba
 D. Malaria
43. Plasmodium is the Species of
 A. Sarcodina
 B. Sporozoa
 C. Ciliates
 D. None of the above
44. Which of the Cestode causes **Hydrated cyst**?
 A. Taenia
 B. Echinococcus
 C. Schistosoma
 D. Trichiuris
45. Incubation period of **Plasmodium falciparum** is.....
 A. 8-11 days
 B. 18-40 days
 C. Few months
 D. 1 Month
46. A Diarrheal Stool sample came to the lab, you find **spinning movement**. What will be your diagnosis?
 A. Giardiasis
 B. Ascariasis
 C. Ancylostomiasis
 D. Amoebiasis
47. A Patient came to the hospital with the following symptoms, Pneumonitis, **loss of appetite, nausea, vomiting, and vague abdominal pain**. What will be your diagnosis?
 A. Ascariasis
 B. Giardiasis
 C. Ancylostomiasis
 D. Malaria.
48. **Stool sample** came to laboratory you find **football shape egg** on microscope with a diameter of 50- 54 micrometer. What will be your diagnosis?
 A. Giardiasis
 B. Trichuriasis
 C. Ascariasis
 D. Schistosomiasis
- 49) *Plasmodium Falciparum* completes his lifecycle in.....hours.

- A. 45 hours
 - B. 48 hours
 - C. 40 hours
 - D. 72 hours
- 50) Which Blood film is used to identify the **species of parasite**?
- A. Thick film
 - B. Thin Film
 - C. Both
 - D. None
51. Each of the following parasite is transmitted by mosquitoes except
- A. Malaria
 - B. Typhoid
 - C. Dengue
 - C. Chikungunya
- 52) Each of the following parasites is transmitted by flies except:
- A. Trypanasoma
 - B. Schistosoma
 - C. loa loa
 - D. Hookworm
- 53) Each of the following parasites is transmitted by eating inadequately cooked fish or sea food except
- A. Tape worm
 - B. Ring worm
 - C. *Giardia lamblia*
 - D. *Toxoplasma gondii*
- 54 . Which of the following is the major vector carrying malaria?
- a) *Culex tarsalis*
 - b) *Aedes Aegypti*
 - c) **Anopheles**
 - d) Any mosquito
55. A is the larval stage of a fluke that is covered with cilia and swims about seeking out a snail to serve as an intermediate host.
- a) **Cercaria**
 - b) Miracidium
 - c) Redia
 - d) Metacercaria
56. Which of the following parasites can cause rectal prolapse?
- a) Hookworm
 - b) Acaris
 - c) **Trichuris**
 - d) All of the above
57. Strongyloides stercoralis can cause:
- a) Diarrhea
 - b) Pulmonary hemorrhage
 - c) Pneumonia
 - d) **All of the above**

58. Which stage of the trematode life cycle (not Schistosomes) is usually infectious for humans?
- Metacercaria**
 - Cercaria
 - Sporocyst
 - Miracidium
59. Cysticercosis is caused by-
- T. solium*
 - T. saginata*
 - A. duodenale*
 - E. Granulosus*
60. All of the following refers to *Leishmania* parasite except
- Endoparasite
 - Obligate parasite
 - Permanent parasite
 - Facultative parasite
61. *S. haematobium* eggs are large and oblong shaped with a
- Lateral spine
 - Terminal spine
 - Rudimentally spine
 - Vertical spine
62. Finding barrel shaped ova in eggs is a diagnostic feature for.....
- Trichinella spiralis*
 - Trichiuris trichiura*
 - Ancylostoma duodenale*
 - Necator americanus*
63. Which of the following mosquito species is the vector for Zika virus and Yellow Fever
- The *Anopheles* mosquito
 - Culex* mosquito
 - Aedes aegypti*
 - All of the above
64. Which of the following best describes a hyperparasite
- Parasite within a parasite
 - Parasite which depends on the host for its entire life
 - An organism that exhibits both parasitic and non-parasitic modes of living
 - All of the above
65. A 24-year-old woman at 32 weeks gestation was confirmed through ultrasound that her foetus had hydrocephaly. This clinical manifestation is thought to be due to an infection acquired during her current pregnancy. The organism which causes this congenital anomaly is
- Trypanosoma cruzi*
 - Plasmodium vivax*
 - Toxoplasma gondii*
 - Trypanosoma brucei*
66. Which of the following is the diagnostic stage of sleeping sickness?
- Amastigote
 - Trypomastigote

- c) Promastigote
d) None of the above
67. Which of the following is the infective stage of Chagas disease?
a) Amastigote
b) Trypomastigote
c) Promastigote
d) Epimastigote
68. A man from Mfangano Island visited the clinic complaining of swelling in the cervical and sub-occipital region. What is his diagnosis?
a) Chagas disease
b) Sleeping sickness
c) Leishmaniasis
d) Malaria
69. A 30-year-old woman presents to her gynecologist with complaints of vaginal itching and a frothy, yellow discharge. She also complains of painful urination. She admits to being sexually active with several men in the past two weeks. Cultures are negative for bacterial growth, but organisms are visible via a wet preparation on low power. The most likely causal agent is
a) *Giardia lamblia*
b) *Candida albicans*
c) *Chlamydia trachomatis*
d) *Trichomonas vaginalis*
70. Which of the following tapeworms is acquired by eating raw or under-cooked pork?
b) *Taenia saginata*
c) *Taenia solium*
d) *Paragonimus westermani*
e) *Hymenolepis nana*
71. Laboratory diagnosis of a patient with a suspected liver abscess due to *Entamoeba histolytica* should include:
a) Xenodiagnosis and string test
b) Indirect hemagglutination test and skin test
c) Stool examination and indirect hemagglutination test
d) Stool examination and blood smear
72. In malaria, the form of plasmodia that is transmitted from mosquito to human is the:
a) Hypnozoite
b) Merozoite
c) Gametocyte
d) Sporozoite
73. Each of the following statements concerning *Ascaris lumbricoides* is **correct except**:
a) *Ascaris lumbricoides* is one of the largest nematode
b) *Ascaris lumbricoides* can cause pneumonia
c) Both dogs and cats are intermediate host of *Ascaris lumbricoides*
d) *Ascaris lumbricoides* is transmitted by ingestion of eggs
74. Each of the following statements concerning kala-azar is **correct except**:

- a) Kala-azar is caused by *Leishmania donovani*
 - b) Kala-azar is transmitted by the bite of sandflies
 - c) Kala-azar occurs primarily in rural latin America
 - d) Kala-azar can be diagnosed by finding amastigotes in bone marrow
75. The most common form of asexual reproduction in protozoa is called as
- A. Binary fission
 - B. Multiple fission
 - C. Both
 - D. None
76. All protozoa required organic materials, which may be particulate or in solution. Such type of nutrition is called
- A. Holozoic
 - B. Saprozoic
 - C. Both
 - D. None
77. Amoebic liver abscesses is the most common form of
- A. Extraintestinal amaebiasis
 - B. Pulmonary amoebiasis
 - C. Cutaneous amoebiasis
 - D. All above
78. Non-pathogenic species of genus *Entamoeba* occurs commonly in the human mouth is
- A. *E. coli*
 - B. *E. gingivalis*
 - C. *E. hartmanni*
 - D. None
79. Protozoal parasites belonging to class Mastigophora are characterized by having
- A. Cilia
 - B. Flagella
 - C. Cyst
 - D. Rhizopoda
80. Metronidazole is the drug of choice for
- A. Amoebiasis B. Trypanosomiasis
 - C. Giardiasis D. Trichomoniasis
81. Trypomastigotes stage of *Trypanosoma* usually found in
- A. Invertebrate host B. Vertebrate host
 - C. Both D. None
82. Epimastigotes stage of *Trypanosoma* usually found in
- A. Invertebrate host B. Vertebrate host
 - C. Both D. None
83. Species of Trypanosomes develop in the anterior portion of the insect gut are called as

- A. Stercoraria B. Salivaria
C. Both D. None

84. In human beings, *Trypanosoma brucei* caused a disease called as

- A. African Trypanosomiasis B. Sleeping sickness
C. Both D. Nagana

85. Common name of *Glossina* species is

- A. Tsetse fly B. Horse fly
C. Both D. None

86. Biological vector of sleeping sickness is

- A. Tsetse fly B. Horse fly
C. House fly D. None

87. Mal de Caderas is a fatal, usually chronic disease of equines caused by

- A. *Trypanosoma equinum* B. *Trypanosoma congolense*
C. *Trypanosoma evansi* D. All above

88. Souma, a disease of cattle, sheep, goat and horses, is caused by

- DA. *Trypanosoma evansi* B. *Trypanosoma equinum*
C. *Trypanosoma congolense* D. *Trypanosome vivax*

89. Chaga's disease can be diagnosed by

- A. Xenodiagnosis B. Thymol turbidity tes
C. Both D. Mercuric chloride test

90. American trypanosomiasis is transmitted by

- A. Kissing bugs B. Tsetse fly
C. Both D. Horse fly

91. Which of the following drugs is effective against *Trichomonas vaginalis*

- A. Penicillin B. Streptomycin
C. Metronidazole D. Pentamidine

92. How long after infection with *Trichomonas vaginalis* do clinical symptoms begin

- A. <24 hours B. 1-5 days
C. 5-10 days D. 1-4 weeks

93. Giardiasis can be diagnosed by

- A. Duodenal biopsy B. Enterotest
C. Both D. None

94. *Giardia* trophozoites contains

- A. One nucleus B. Two nuclei
C. Three nuclei D. Four nuclei

95. Gastro-intestinal disturbances associated with giardiasis include

- A. Flatulence B. Bloating
C. Purple burbs D. All above

96. Drug of choice against Trichomoniasis is
A. Metronidazole B. Tinidazole
C. Paramomycin D. furazolidone
97. Leishmaniasis is transmitted by
A. Sand fly B. Tsetse fly
C. Horse fly D. House fly
98. Visceral leishmaniasis is also known as
A. Kala azar B. Dum dum fever
C. Both D. None
99. Each of the following statements concerning *Ascaris lumbricoides* is correct except:
A. *Ascaris lumbricoides* is one of the largest nematode
B. *Ascaris lumbricoides* can cause pneumonia
C. Both dogs and cats are intermediate host of *Ascaris lumbricoides*
D. *Ascaris lumbricoides* is transmitted by ingestion of eggs
100. Each of the following statements concerning hookworm infection is correct except
A. Hookworm infection can cause pneumonia
B. Hookworm infection is acquired by humans when filariform larvae penetrate the skin
C. Hookworm infection is caused by *Necator americanus*
D. Hookworm infection can be diagnosed by finding the trophozoite in the stool
101. Pigs or dogs are the source of human infection by each of the following parasites except
A. *Echinococcus granulosus* B. *Taenia solium*
C. *Ascaris lumbricoides* D. None
102. The name helminth is derived from the Greek words helmins or helminthos which means
A. Fluke B. Nematode
C. Cestode D. Worm
103. The name helminth is usually applied to Parasitic and non-parasitic species of
A. Flatworms B. Tapeworms
C. Roundworms D. All of above
104. Anthelmintics are chemicals used to kill
A. Helminths B. Insects
C. Arachnids D. Protozoa
105. Anthelmintics are used to A
A. Kill the worms B. Remove the eggs from pasture
C. Both D. None

106. Praziquantel is effective against B
A. Trematodes B. Cestodes
C. Nematodes D. None
107. Helminth parasite found in muscles is
A. Trichinella spiralis B. Haemonchus contortus
C. Trichostrongylus D. Oesophagostomum
108. Trematodes present in bile duct and pancreas is
A. Fasciola hepatica B. Eurytrema pancreaticum
C. Echinococcus granulosus D. Oesophagostomum
109. Head of cestodes is also known as
A. Scolex B. Proboscis
C. Bothria D. Bothriate
110. Pork tape worm is name given to following parasite
A. Taenia solium B. Taenia saginata
C. Trichostrongylus D. Oesophagostomum
111. Body of nematodes is covered with
A. Cuticle B. Dermis
C. Hypodermis D. None of above
112. Deworming of Children for nematodes should be done after
A. One month B. Every year
C. One week D. 3 months
113. Most commonly used anthelmintic are
A. Benzimidazole B. Levamisole
C. Ivermectin D. All above
114. Parasite transmitted by eating poorly cooked beef is
A. Haemonchus B. Trichostrongylus
C. Taenia Saginata D. None
115. Larvae having long esophagus not proportional to the length of body are called as
A. Filariform B. Rhabditiform
C. Gubernacular D. None
116. Protozoan transmitted sexually is_____
A. Entamoeba histolytica B. Trichomonas vaginalis
C. Giardia lamblia D. Balantidium coli
117. Each of the following parasites passes through the lung during human infection EXCEPT:
A. Necator americanus B. Strongyloides stercoralis
C. Wuchereria bancrofti D. Ascaris lumbricoides

118. Each of the following statements concerning *Strongyloides stercoralis* is correct EXCEPT:

- A. *S. stercoralis* produces filariform larvae.
- B. Migrating larvae of *S. stercoralis* induce a marked eosinophilia.
- C. *S. stercoralis* undergoes a free-living life cycle in soil.
- D. *S. stercoralis* is acquired by ingestion of eggs.

119. Which of the following tapeworms is acquired by eating raw or undercooked pork?

- A. *Taenia saginata*
- B. *Taenia solium*
- C. *Diphyllobothrium latum*
- D. *Hymenolepis nana*

120. Nematoda means_____.

- A. pointed bodies
- B. peaked heads
- C. pointed ends
- D. pointed cells