



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

MEDICAL LABORATORY SCIENCES

AML 2208 : BACTERIOLOGY III

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2019

TIME: 2 HOURS

DATE: Pick Date Aug 2019

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of two Section(s). Attempt ALL questions.

Circle the correct answer in section A.

SECTION A (40 Marks)

1. The Food borne pathogen that is able to grow at cold temperatures is known as?
 - A. *Bacillus cereus*
 - B. *Clostridium pefringens*
 - C. *Campylobacter jejuni*
 - D. *Aeromomnus hydrophila*
2. Chinese restaurant syndrome is associated with?
 - A. *Bacillus cereus*
 - B. *Clostridium pefringens*
 - C. *Campylobacter jejuni*
 - D. *Aeromomnus hydrophila*

3. Guillaine – barre syndrome is caused by?
 - A. *Staphylococcus aureus*
 - B. *Campilobacter*
 - C. *Escherichia coli*
 - D. *Candida*
4. Pigs are known to be chronic carriers of?
 - A. *Yersinia pestis*
 - B. *Yersinia enterocolitica*
 - C. *Clostridium tetani*
 - D. *Staphylococcus aureus*
5. Which one of the following species of *Yersinia* causes gastroenteritis?
 - A. *Yersinia pestis*
 - B. *Yersinia enterocolitica*
 - C. *Yersinia pseudotuberculosis*
 - D. None of the above
6. Which one of the following organisms is regarded as a water borne infections?
 - A. *Mycobacterium tuberculosis*
 - B. *Staphylococcus aureus*
 - C. *Vibrio cholerae*
 - D. *Bacillus anthraxix*
7. Which of the following organism causes food poisoning with a short incubation period?
 - A. *Staphylococcus aureus*
 - B. *Escherichia coli*
 - C. *Salmonella*
 - D. *Shigella boydii*
8. Which one of the following is not a bacterial food borne infection
 - A. *Typhoid fever*
 - B. *Shigellosis*
 - C. Hepatitis A
 - D. Cholera
9. The following mycoses cause food borne infection except??
 - A. *Candida*
 - B. *Wangiella* species
 - C. *Sporothrix* species
 - D. None of the above

10. Food borne intoxications are caused by consumption of?
- A. Bio toxicants
 - B. Poisonous substances
 - C. Toxins
 - D. All of the above
11. Which one of the following bacteria is not a common cause of food borne intoxication?
- A. *Staphylococcus aureus*
 - B. *Bacillus cereus*
 - C. *Clostridium perfringens*
 - D. *Clostridium tetani*
12. Which one of the following conditions does not alter normal flora?
- A. Antibiotic use
 - B. Radiation
 - C. Chemotherapy
 - D. None of the above
13. Bacterial infectivity may occur through the following ways except?
- A. Production of toxins
 - B. Adherence to the mucosal surface
 - C. Invasion of mucosal cells
 - D. Agglutination
14. Which one of the following bacteria is zoonotic?
- A. *Bacillus anthracis*
 - B. *Bacillus cereus*
 - C. *Bacillus sterothermophilus*
 - D. All the above
15. Which one of the following bacteria tolerates very high temperatures?
- A. *Shigella*
 - B. *Bacillus cereus*
 - C. *Mycobacterium tuberculosis*
 - D. *Bacillus sterothermophilus*
16. Syphilis rapid diagnostic test strip is an example of
- a) Immunochromatographic test
 - b) Latex agglutination test
 - c) Direct agglutination test
 - d) None of the above
17. The following are examples of antibody detection techniques except?
- a) Direct agglutination
 - b) Agglutination inhibition
 - c) Immunodot
 - d) DNA extraction

18. The following are Rapid diagnostic techniques except?
- Culture
 - Antigen detection
 - Antibody detection
 - Molecular detection
19. Rapid diagnostic tests are
- Quantitative
 - Semi quantitative
 - Qualitative
 - Semi qualitative
20. Which one of the following is a RDT for bacteria identification in a bacteriology laboratory
- API strip
 - Malaria rapid diagnostic test kit
 - Determine HIV strip
 - Rota /Adeno Virus test cassette
21. Which one of the following is false about clostridium species?
- Aerobic
 - Gram positive
 - Forms spores
 - Saprophytes
22. Which one of the following clostridia is opportunistic
- Clostridium tetani*
 - Clostridium wlchi*
 - Clostridium sporogens*
 - Clostridium perfringens*
- 19 Beta toxin production is a characteristic of?
- C. botulinum*
 - C. sporogens*
 - C. welchi*
 - C. perfringens type C*
- 20 Which one of the following bacteria creates spores that can remain dormant for over 30 years?
- Bacillus anthracis*
 - Clostridium tetani*
 - Escherichia coli*
 - Clostridium botulinum*

- 21 Food borne illnesses are?
- A. Consumption of red meat
 - B. Associated with recent consumption of food
 - C. Swimming in an infected water
 - D. Consumption of pork
- 22 Which one of the following is a disadvantage of rapid diagnostic techniques?
- A. Expensive
 - B. Accurate
 - C. Simple to use
 - D. Stable at room temperature
- 23 The following are rapid diagnostic techniques except?
- A. Antigen detection
 - B. Antibody detection
 - C. Molecular detection
 - D. Protein detection
- 24 Which one of the following is not a role of the central laboratory?
- A. Developing algorithms
 - B. Writing of standard operating procedures
 - C. RDT accuracy testing
 - D. SOP and quality assurance culture
- 25 The bacteria that is oxygen sensitive and grows with between 5 – 10% carbon dioxide is known as?
- A. *Staphylococcus aureus*
 - B. *Campylobacter*
 - C. *Escherichia coli*
 - D. *Bacillus*
- 26 The most common method of killing microorganisms in water supply is?
- A. Oxidation with chemicals e.g. chlorine dioxide
 - B. Boiling
 - C. Filtration
 - D. Sedimentation
- 27 Which one of the following media is not used to isolate staphylococcus aureus?
- A. Nutrient agar
 - B. Cooked meat media
 - C. Mackonkey
 - D. Blood agar

- 28 Fungi have the following components except?
- A. Chitin
 - B. Glucan
 - C. Cholesterol
 - D. Ergosterol
- 29 Apart from yeast the other form of fungi is known as?
- A. Moulds
 - B. Sporangiospore
 - C. Conidia
 - D. Conidiophore
- 30 Fungi usually reproduce by?
- A. Budding
 - B. Sporulation
 - C. Fermentation
 - D. None of the above
- 31 Dimorphic fungi are best cultivated in?
- A. Brain heart infusion
 - B. Bird seed agar
 - C. Sabouraud dextrose agar
 - D. Corn meal agar
- 32 Aflatoxin is produced by
- A. Candida
 - B. Fusarium
 - C. Aspergillus
 - D. Penicillium
- 33 Water borne diseases related to flooding include the following except?
- A. Hepatiti A
 - B. Dengue fever
 - C Malaria
 - D. Hepatitis B
- 34 Which one of the following steps is not involved in the completion of MPN test?
- A. Presumptive test
 - B. Confirmed test
 - C Completed test
 - D. Enumeration test

- 35 The purpose of confirmation test in MPN test is?
- A. Detection and estimation of coliforms
 - B. Determine the presence of *E. coli*
 - C. Detection of Klebsiella
 - D. Quantification of *E. coli*
- 36 Which is the correct criteria for grading raw milk in MBRT?
- A. 5 hours and above – Very good
 - B. 3 hours and above – Very good
 - C. 1 – 2 hours - Good
 - D. 1 – 2 hours – Good
- 37 Water borne infections may result from the following conditions except?
- A. Bathing
 - B. Washing
 - C. Drinking
 - D. Cooking
- 38 Which one of the following foodborne infections is spread through the ingestion of exotoxin?
- A. Botulism
 - B. Toxic shock syndrome
 - C. Tetanus
 - D. Gangrene
- 39 Which one of the following organisms is a universal inhabitant of the gut?
- A. *Bacillus cereus*
 - B. *Campylobacter*
 - C. *Clostridium perfringes*
 - D. *Escherichia coli*
- 40 Methylene blue reduction test is done to assess the quality of?
- A. Water
 - B. Maize
 - C. Milk
 - D. Meat

SECTION B (60 Marks)

41. a) Outline the advantages and disadvantages of rapid diagnostic tests (10 marks)
b) Describe the principle behind immunochromatographic rapid diagnostic tests (10 marks)
42. a) Discuss the classification of food borne infections (10 marks)
b) Describe the two forms of gastroenteritis caused by Bacillus (10 marks)
43. a) Describe the methylene blue reduction test (10 marks)
b) Outline five characteristics of clostridium (5 marks)
c) Lists any five water borne diseases that you know (5 marks)