



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

Type program name

AML 2208 : MEDICAL BACTERIOLOGY III

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: Pick Date Select Month Pick Year

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

1. The following are coliform bacteria except_____
 - a) Klebsiella
 - b) Escherichia coli
 - c) Staphylococcus
 - d) Citrobacter
2. Rats are of great public health concern because they are associated with transmission of_____
 - a) *Yersinia pestis*
 - b) *Bacillus anthracis*
 - c) *Plasmodium vivax*
 - d) *Corynebacterium diphtheriae*

3. The primary stain in Gram stain reaction is _____
- a) Crystal violet
 - b) Methylene blue
 - c) Safranin
 - d) Malachite green
4. The medium used for the isolation of *Mycobacterium tuberculosis* is _____
- a) Chocolate blood agar
 - b) Egg yolk agar
 - c) LJ medium
 - d) Malachite green agar
5. Which of the following medium is used to isolate Staphylococcus from food?
- a) Thayer Martin
 - b) MacConkey broth purple
 - c) Mannitol salt agar
 - d) Brain heart infusion agar
6. Aflatoxins are toxins which are produced by _____
- a) Fungi
 - b) Gram negative bacteria
 - c) Gram positive spore formers
 - d) Viruses
7. The term pathogenic must be used in reporting the following bacteria _____
- a) Salmonella typhi
 - b) Mycobacterium tuberculosis
 - c) Staphylococcus aureus
 - d) Escherichia coli
8. Which of the following vaginal flora cause opportunistic infection?
- a) *Trichomonas vaginalis*
 - b) Lactobacillus
 - c) *Candida albicans*
 - d) *Pseudomonas*

9. Escherichia coli detected in contaminated water sample is reported as _____

- a) EPEC
- b) Urine E.coli
- c) Non fecal E.coli
- d) Fecal E.coli

10. Food poisoning by Bacillus cereus can be acquired through _____?

- a) Consumption of contaminated refrigerated rice meal
- b) Fleas which feed on rodents
- c) Aerosols
- d) Person to person contact

11. Which of the following volume of water sample is inoculated in 10ml double strength MacConkey broth purple?

- a) 20ml
- b) 5ml
- c) 0.1ml
- d) 10ml

12. Which of the following test is used for screening for typhoid among food handlers?

- a) Blood culture
- b) Widal
- c) Gram stain
- d) Urease

13. Which of the following dye is used to test microbial contamination of milk?

- a) Safranin
- b) Methylene blue
- c) Crystal violet
- a) Malachite green

14. Lecithinase reaction by Clostridium is observed in media supplemented with _____

- a) Egg yolk
- b) Blood
- c) Plasma
- d) Selenium salts

15. Why is it recommended to administer botulism antitoxin without waiting for laboratory results?

- a) Laboratory tests are not established
- b) The toxin is not fatal
- c) Laboratory tests may take up to 4 days
- d) Test mice will die

16. Salmonella is differentiated from Proteus by _____

- a) Lactose fermentation
- b) Growth on MacConkey
- c) Urease test
- d) Motility

17. Which one of the following bacteria causes bacillary dysentery?

- a) Shigella
- b) Escherichia coli
- c) Entamoeba histolytica
- d) Salmonella

18. Acute, profuse, watery diarrhoea (traveller's diarrhoea) is caused by

- a) Shigella
- b) ETEC
- c) EPEC
- d) Clostridium perfringens

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19. Which of the following statements on *Bacillus anthracis* is incorrect? The bacteria _____

- a) Can be found in human normal flora
- b) Produce spores
- c) Can be acquired in slaughter houses
- d) Can cause fatal infection

20. Red color was observed on adding Kovac's reagent in peptone culture indicating presence of _____

- a) peptone
- b) Indole
- c) Tryptophan
- d) proteins

21. Food handler's nostrils are screened for carriage of _____

- a) Staphylococcus aureus
- b) Staphylococcus albus
- c) Staphylococcus epidermidis
- d) Staphylococcus hominis

22. The following pathogens can be acquired through consumption of raw milk except_____
- a) Campylobacter
 - b) Staphylococcus
 - c) Salmonella
 - d) Treponema
23. Which of the following organism is classified according to the position of spore
- a) Bacillus
 - b) Clostridia
 - c) Lactobacillus
 - d) Mycobacteria
24. Anthrax is caused by a species of the following bacteria
- a) Clostridium
 - b) Mycobacterium
 - c) Bacillus
 - d) Brucella
25. Which one of the following temperature is used for confirmation of Fecal E. coli?
- a) 25°C
 - b) 37°C
 - c) 56°C
 - d) 43°C
26. Mucoid colonies isolated from milk are most likely to be_____
- a) Klebsiella
 - b) Streptococcus
 - c) Proteus
 - d) Citrobacter
27. Profuse rice water like diarrhea is caused by _____
- a) Staphylococcus aureus
 - b) Vibrio cholerae
 - c) ETEC
 - d) Shigella
28. Identification of bacteria by using viruses which infect the microorganisms is called_____
- a) Phage typing
 - b) Biotyping
 - c) Serotyping
 - d) Serology

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29. Non selective medium is used for enrichment of Salmonella from food because _____
- Salmonella from food are Urease negative
 - Selenite fecal broth inhibits food Salmonella
 - Some of the Salmonella may be injured
 - Selenite fecal broth needs to be subcultured
30. The following is correct about Millipore filters except, _____
- The filter retain bacteria following filtration
 - The filter can be placed on surface of media
 - The method is easier to use than the MPN assay
 - Viruses cannot pass through the filters
31. Fecal Indicator organism differ from pathogens by _____
- Differ in laboratory requirements
 - Fecal bacteria are lactose fermentors
 - Pathogens are not present in fecal samples
 - Indicator organisms are more than the pathogen in sample
32. Which of the following bacterium is a normal flora of milk?
- Mycobacterium tuberculosis*
 - Campylobacter jejuni*
 - Streptococcus lactis*
 - Listeria monocytogenes*
33. The standard Plate Count Agar medium is use used for _____
- MPN
 - Total viable count
 - Enrichment
 - Sensitivity tests
34. Which of the following medium is used for detection of coliform in milk?
- MacConkey broth
 - Nutrient broth
 - Selenite fecal broth
 - Mueller Hinton agar
35. Depending on the decolorization time in Methylene reductase test, which of the following milk sample is of good quality ?
- Immediate
 - 30 minutes
 - More than 8 hours
 - 1 to 2 hours

36. Which of the following conditions is suitable for growth of *Clostridium botulinum*?

- a) Increased Oxygen tension
- b) reduced oxygen
- c) Anaerobic conditions
- d) Facultative conditions

37. Which of the following organism is does not produce exotoxin in food?

- a) *Salmonella typhi*
- b) *Clostridium perfringens*
- c) *Bacillus cereus*
- d) *Staphylococcus aureus*

38. *Listeria monocytogenes* can survive in refrigerated food because it is_____

- a) Highly virulent
- b) A mesophile
- c) Anaerobic
- d) psychotrophic

39. The type of haemolysis caused by *Staphylococcus aureus* in blood agar is_____

- a) Φ
- b) α
- c) β
- d) γ

40. Which one of the following media is used to grow fastidious mycotoxins producing fungi?

- a) TCBS
- b) Brain heart infusion
- c) Bird seed agar
- d) CLED

Section B

41.

- a) Discuss Food borne diseases caused by *Bacillus cereus* (10 Marks)
- b) Outline the pour plate procedure for enumeration of food bacteria in contaminated soup (10 marks)

Q42. (i) Explain the importance of the following

- a) Durham tubes in in MacConkey broth purple (5 Marks)
- b) Double strength media in water analysis (5)

(ii) Describe the microbial analysis of milk (10 Marks)

43. Briefly discuss the microbiological analysis for Staphylococcal food poisoning under, description of organism, isolation, staining and biochemical identification (20 Marks)

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