



# TECHNICAL UNIVERSITY OF MOMBASA

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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.**

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## Section A

1. Swarming bacteria colonies isolated from milk are most likely to be \_\_\_\_\_

- a) Klebsiella
- b) Streptococcus
- c) Proteus
- d) Citrobacter

2. Bacillary diarrhea is caused by \_\_\_\_\_

- a) Staphylococcus aureus
- b) Vibrio cholerae
- c) ETEC
- d) Shigella

3. Identification of bacteria according to their somatic antigen is \_\_\_\_\_
- a) Phage typing
  - b) Biotyping
  - c) Serotyping
  - d) Serology
4. Non selective medium is used for isolation of *Staphylococcus* is \_\_\_\_\_
- a) Mannitol Salt agar
  - b) MacConkey agar
  - c) Nutrient agar
  - d) Blood agar
5. Colonies of *Escherichia coli* in EMB agar appear as \_\_\_\_\_
- a) Pink colonies
  - b) Pale colonies
  - c) Muroid blue colonies
  - d) Blue metallic colonies
6. Enterococci is the best Indicator for fecal contamination of the following samples \_\_\_\_\_
- a) Distilled water
  - b) Salty water
  - c) Fresh water
  - d) Mineral water
7. Fungal toxins detected in milk are known as \_\_\_\_\_
- a) Shiga toxins
  - b) Vertoxins
  - c)  $\beta$ -Lactamase
  - d) Mycotoxins
8. Which of the following medium is used for total viable count of bacteria?
- a) BGLBB
  - b) SPC agar
  - c) TCBS
  - d) Blood agar
9. Which of the following equipment is used to trap gas in MacConkey broth cultures?
- a) Micropipette
  - b) Test tube
  - c) Crack in TSI
  - d) Durham tubes

10. The following will affect the milk reductase test except \_\_\_\_\_
- a) Bacterial spores
  - b) Number of bacteria
  - c) Oxygen
  - d) Light
11. Enterotoxin found in canned beef is most likely to be produced by \_\_\_\_\_
- a) Pseudomonas
  - b) Campylobacter
  - c) Clostridium
  - d) Hepatitis B
12. Gram stained yeast cells will appear as \_\_\_\_\_
- a) Non budding pink cells
  - b) Green cells
  - c) Budding pink cells
  - d) Budding Blue cells
13. Alkaline peptone water is enrichment medium for the isolation of \_\_\_\_\_
- a) Halotolerant Staphylococcus species
  - b) *Salmonella typhi*
  - c) *Vibrio cholerae* O1
  - d) Salmonella non typhi
14. Which of the following organism if ingested may cause diarrhea?
- a) *Shigella*
  - b) *Clostridium perfringens*
  - c) *Bacillus cereus*
  - d) *Staphylococcus aureus*
15. *Listeria monocytogenes* in motility medium appears as \_\_\_\_\_
- a) Convex growth in the bottom of the medium
  - b) Turbid growth in entire medium
  - c) Grows as a straight line along the 'line' of inoculation
  - d) Umbrella-type growth in semi-solid media

16.  $\alpha$  - haemolysis is described as \_\_\_\_\_
- Complete haemolysis with clear area around the colony
  - Incomplete haemolysis with greenish colour around the colony
  - Complete haemolysis with large clear zones
  - Non-haemolytic activity
17. Food poisoning by molds is most likely caused by ingestion of \_\_\_\_\_
- Candida albicans*
  - Edible mushrooms
  - Mycotoxins
  - Fungal spore
18. The Methylene reductase test of milk is carried to detect the presence of \_\_\_\_\_
- Mycobacterium bovis*
  - Microbial contamination
  - Fecal *Escherichia coli*
  - Pathogenic bacteria
19. Precipitate formed around colonies on egg yolk media by *Clostridia* is due to production of \_\_\_\_\_
- Catalase
  - Spores
  - Pigments
  - Lecithinase
20. Test for botulism toxin is carried in the laboratory by using \_\_\_\_\_
- Mice
  - Blood agar
  - Volunteers
  - Spore staining techniques
21. Which of the following media differentiates *Proteus* and *Salmonella*?
- MacConkey agar
  - SS agar
  - Urea agar
  - Citrate agar
22. Which one of the following bacteria causes typhoid?
- Clostridium difficile*
  - Brucella abortus*
  - Entamoeba histolytica*
  - Salmonella* species

23. The following is true about Fecal *Escherichia coli* except\_\_\_\_\_
- a) It's a coliform
  - b) Is an indicator for water contamination
  - c) It is not found in children
  - d) Some strains are pathogenic
24. The bacteria which causes bubonic plague is transmitted\_\_\_\_\_
- a) Through flea bites
  - b) Through mosquito bites
  - c) Oral fecal contamination
  - d) Through milk contamination
25. Acute, profuse, and voluminous watery diarrhoea is caused by\_\_\_\_\_
- a) Shigella
  - b) ETEC
  - c) EPEC
  - d) Vibrio cholerae
26. Specimen suspected to contain the following organism are handled in the Biosafety cabinet\_\_\_\_\_
- a) *Staphylococcus aureus*
  - b) *Bacillus anthracis*
  - c) *Shigella dysenteriae*
  - d) *Salmonella typhi*
27. Effervescences is observed when the following reagent is added to catalase positive bacteria
- a) Oxidase
  - b) Acetone
  - c) Iodine
  - d) H<sub>2</sub>O<sub>2</sub>
28. Which of the following samples is required for the widal test
- a) Nostril swabs
  - b) Serum
  - c) stool
  - d) Urine
29. Which of the following milk borne pathogen cause fever
- a) Campylobacter
  - b) Staphylococcus
  - c) Brucella
  - d) Salmonella

30. Which of the following bacteria is a beneficial normal flora
- a) Lactobacillus
  - b) Bacillus
  - c) Clostridia
  - d) Candida
31. Botulism poisoning is caused by a species of the following bacteria
- a) Mycobacterium
  - b) Bacillus
  - c) Clostridium
  - d) Brucella
32. Which of the following chemical is added in medium to selectively isolate Staphylococcus from food?
- a) Calcium chloride
  - b) Bile salts
  - c) Agar powder
  - d) Sodium chloride
33. Aflatoxins in heat cooked foods\_\_\_\_\_
- a) Is destroyed
  - b) Can not cause disease
  - c) Is still active
  - d) Is inactivated
34. MPN as used in microbiological analysis of water means\_\_\_\_\_
- a) Most probable number
  - b) Multiple probable numbers
  - c) Multidrug profile index
  - d) Media plate network
36. Candidiasis can be caused by reduction of the following vaginal bacteria\_\_\_\_\_
- a) *Spirochaetes*
  - b) *Lactobacillus*
  - c) *Candida species*
  - d) *Streptococcus group B*
37. If Coliform are detected in contaminated water sample the test is referred to as\_\_\_\_\_
- a) Confirmation test
  - b) Conclusive test
  - c) Presumptive test
  - d) Pilot study

10. Which one of the following pathogen cause diarrhea on consuming refrigerated rice meals?
- a) *Bacillus cereus*
  - b) *Shigella flexneri*
  - c) ETEC
  - d) *Bacillus subtilis*
38. Which of the following volume of contaminated water sample is not inoculated in 10 ml single strength MacConkey broth purple?
- a) 2ml
  - b) 10ml
  - c) 0.1ml
  - d) 1ml
39. Why are food handlers screened for typhoid?
- a) *Salmonella typhi* is common in salad foods
  - b) *S. typhi* cause gastroenteritis in sick persons
  - c) *S. typhi* is invasive
  - d) *S. typhi* can be carried by healthy persons
40. MacConkey purple broth tube cultures are recorded positive if the following is observed\_\_\_\_\_
- a) Yellow colour, Gas in Durham tubes
  - b) Purple colour ,no gas in Durham tubes
  - c) Yellow colour ,No gas in Durham tubes
  - d) Purple colour, gas in Durham tubes

Section B

41.

- a) Discuss water borne diseases caused by *Escherichia coli* (10 Marks)
- b) Describe the preparation of MacConkey broth purple (10 marks)

Q42. (i) Differentiate between Food borne intoxication and infection (10 Marks)

- (ii) Explain the confirmation tests for detection of fecal *Escherichia coli* in water (10 Marks)

43. Briefly discuss the microbiological analysis for *Clostridium* food poisoning under, description of organism, classification, culture and biochemical identification (20 Marks)