



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences

DEPARTMENT OF MEDICAL SCIENCES

DIPLOMA IN MEDICAL LABORATORY SCIENCES
(DMLS)

AML 2201 : BACTERIOLOGY III

SPECIAL/SUPPLEMENTARY : EXAMINATIONS

SERIES: OCTOBER 2013

TIME: 2 HOURS

INSTRUCTIONS:

You should have the following for this examination

- *Answer booklet*

This paper consists of **TWO** sections.

Answer all questions in **Section A** and **B**. $\frac{1}{2}$ marks deducted for any wrong answer in **Section A**.

This paper consists of 6 PRINTED pages
SECTION A MCQ (40MARKS)

1. How many test tubes are used in the presumptive coliform count test for untreated water
 - a) 10 tubes
 - b) 5 tubes
 - c) 20 tubes
 - d) 15 tubes

2. Gram stain used for staining bacteria is
 - a) Acid fast stain
 - b) Differential stain
 - c) Cell wall stain
 - d) Negative stain

3. The following are clinical symptoms of botulism which one is not
 - a) Blurred vision
 - b) Difficulty in swallowing
 - c) Muscle weakness
 - d) Vomiting

4. The causative agent of typhoid fever is
 - a) Salmonella typhi
 - b) Staphylococcus aureus
 - c) Eshcerchia coli
 - d) None of the above

5. State of TWO presentive method of typhoid fever
 - a) Purificaiton of drinking water
 - b) Interaction of patients
 - c) Milk pasteurization
 - d) None of these

6. When reporting of water analysis results the following terms are used which one is not
 - a) Surcipcims
 - b) Highly satisfactory
 - c) Satisfactory
 - d) No organism seen

7. Which among the following is a serological test for salmonella typhi fever
 - a) Wet preparation
 - b) Thin and thick smear
 - c) Widal test
 - d) None of the above

8. Gas production in the presumptive water analysis test is noted by
 - a) Raided Durham tube
 - b) Half filled space in the Durham's tube
 - c) Empty space in the Durham's tube
 - d) None of the above

9. While conducting water analysis , sodium is added to:
 - a) To clean water of dirt
 - b) To neutralize chlorine

- c) To whiten water sample
 - d) To kill water pathogens
10. The change in the media colour from blue to yellow during the presumptive coliform for water analysis indicated
- a) Presence of non-lactose fermenters
 - b) Presence of lactose fermenters
 - c) Expiry of media
 - d) None of the above
11. Colourisation in bacterial indicates
- a) Noticeable impairment of body function
 - b) Ability to cause a disease
 - c) Establishment of microbial growth within the host
 - d) None of the above
12. Bacteria usually produce toxin which are they?
- a) A-B toxins
 - b) Endotoxins
 - c) Exotoxins
 - d) None of the above
13. Microbial antagonism is defined as
- a) Competition for nutrients and colonising sites
 - b) Ability to cause infection
 - c) Protection of surface by intact normal flora in healthy individuals
 - d) None of the above

14. Bacteria transmission is through two modes

- a) Cocyngation
- b) Transduction
- c) Direct contact
- d) Indirect contact

15. A biological indicator control used in autoclave is

- a) Clostridium tetan spore
- b) Baillus steorothermophicus spore
- c) Both of these
- d) None of these

16. Bacteria which grow best below 20°C are known as

- a) Psychrophicic
- b) Mesophilic
- c) Thermophilicic
- d) Hyprethermophiles

17. Blood agar is

- a) Enrichments medium
- b) Enriched medium
- c) Differential medium
- d) None of these

18. Moist heat under pressure is used in

- a) Pasteurization
- b) Inspissations
- c) Autoclave
- d) Tyndalisation

19. Bacteria endospores are

- a) Produced during the shortage of food supply
- b) Killed by heating at 60°C for 15 minutes
- c) Stained by grams stain
- d) Usually produced by young cells

20. Which of the following characterizes a differential stain

- a) Where different bacteria stain similarly to a common stain
- b) Where only one stain is used and all bacteria stain similarly
- c) Where the background is stained by an acidic dye such as negosin
- d) Where the structures of bacteria such as spores capsules and granules are demonstrated

21. Fimbriae in bacteria perform the following factors except

- a) Bacterial mating
- b) Attachment on solid surfaces and blocks
- c) Motility of bacteria
- d) Both b and C

22. The movement of DNA from one bacteria to another through a tubular bridge or pinks is referred to as:

- a) Conjugation
- b) Transfusion

- c) Transposition
- d) Transduction

23. Dark field microscopy is used to identify

- a) Spirochaetes
- b) Viruses
- c) Hyphae
- d) Rickhsiae

24. Which among the four contraction is used for sputum decontamination

- a) 40% sodium chloride
- b) 4% sodium hydroxide
- c) 40% potassium hydroxide
- d) 10% potassium hydroxide

25. Bacteria growth is denoted by

- a) Over consumption of available nutrients
- b) Increase in cell volume
- c) Increase in cell number of endospores
- d) Increase in cell number by cell division

26. In grains staining which one of the following is the mordant

- a) Loefflent mordant
- b) Grains Iodine
- c) Bovines fixative
- d) Tannic acid

27. A laboratory technician dressed in white parts, labcoat and shoes, prepares to leave the lab for lunch. In addition to washing down the bench with disinfectant and washing ones hands for safety sake one should also
- a) Sip coffee from the bech
 - b) Put on safety goggles
 - c) Remove labcoat
 - d) Remove polyvinyl gloss and place them into labcoat pocket for future uses
28. One of the following statements is not true about Agar
- a) It is an inert material
 - b) It provides some nutritised components for growing bacteria
 - c) It melts between temperatures of 95°C and solidifies of below 40°C
 - d) It is a complex polysaccharide
29. The procedure for tyndausation is usually carried out for 3 successive days as
- a) 80°C for 30 minutes
 - b) 100°C for 20 minutes
 - c) 121°C for is minutes
 - d) 80°C for the 20 minutes
30. While autoclaving, which is the required temperature?
- a) 121°C for 15-20minutes

- b) 121°C for 40 minutes
- c) 100°C for 15-20minutes
- d) 100°C for the minutes

SECTION B ESSAY (60marks)

1. While stating the principle, Discuss the eijlemans test **(20marks)**
2. Discuss how are conduct the presumptive coliform count test for untreated water **(20marks)**
3. Discuss the four stages of bacterial infection **(20marks)**