



# TECHNICAL UNIVERSITY OF MOMBASA

*Faculty of Applied and Health Sciences*

**DEPARTMENT OF MEDICAL SCIENCES**

DIPLOMA IN MEDICAL LABORATORY SCIENCES  
(DMLS )

**AML 2200 : BACTERIOLOGY II**

**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 9 PRINTED pages*  
**SECTION A MCQ (40MARKS)**

1. The number of chromosomes on a bacteriacim is
  - a) Three
  - b) One
  - c) Five
  - d) Two
  
2. The functions of the bacteria capsule are:-
  - a) Potation from phagocytosis
  - b) Attachment to a wide variety of surfaces
  - c) Pathogenicity
  - d) Antigenicity
  
3. Bacterial endospores are
  - a) Usually produced by young cell
  - b) Killed by hearing at 68°C for 15minutes
  - c) Stained by Gram stain
  - d) Producered during the storage of food supply
  
4. Fiabriae do all functions below except?
  - a) Motility of bacteria
  - b) Both a and C
  - c) Attachement on solid surfaces and hosts
  - d) Bacterial mating

5. Which of the following may be safety pipette by month?
- a) Serum
  - b) Saline solution
  - c) Urine
  - d) None of the above
6. Optimum temperature for most of the pathogenic bacteria is
- a) 37°C
  - b) 47°C
  - c) 27°C
  - d) None of the above
7. Inter membrane is found in
- a) Gram positive bacteria
  - b) Staphylococcus aureus
  - c) Gram negative bacteria
  - d) Both a and b
8. The temperature ranges for mesophilic bacterial is
- a) 25 -40°C
  - b) 1 – 20°C
  - c) 55- 80°C
  - d) Below 0°C
9. Dark field microscopy is used to identify:
- a) Rickettsiae
  - b) Viruses

- c) Spirochoeris
  - d) Mycorplasma
10. The strength of magnification of oil immersion ten is
- a) X 50
  - b) X40
  - c) X20
  - d) X100
11. A biological indicator used in autoclose is
- a) Bacillus steantherphillus spore
  - b) Clostridium tetani spore
  - c) Staphylococcus aureus
  - d) None of the above
12. Sterilization by autoclave is carried out at
- a) 100°C for 15-20minutes
  - b) 100°C for 60minutes
  - c) 121°C for 60 minutes
  - d) 121°C for 15 -20minutes
13. Grains stain used for staining bacteria is a:
- a) Cell well stain
  - b) Acid fast stain
  - c) Differential stain
  - d) Negative stain

14. In Gram's staining which of the following is the mordant?

- a) Leoffler's mordant
- b) Tannic acid
- c) Gram's iodine
- d) Boric acid fixative

15. In Ziehl-Neelsen staining 3% acid alcohol is used as a

- a) Counter stain
- b) Buffer
- c) Decolouriser
- d) Mordant

16. Moist heat under pressure is used in :-

- a) Autoclave
- b) Pasteurisation
- c) Tyndallisation
- d) Inspissation

17. Blood agar is :

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

18. Seitz filter is made up of :

- a) Porcelain
- b) Cellulose
- c) Diatomacenis earth
- d) Asbestos

19. Which statement best describe Agar?

- a) It melts between temperatures of 95°C and solidifies below 40°C
- b) It is an inert material
- c) Provides some nutritional components for growing bacteria
- d) It is a complex polysaccharide obtained form certain sea needs

20. The following is used for sporum decontaimination

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

21. Membrane filter is made up of:

- a) Cellulose nitrate
- b) Cellulose acetate
- c) Both A and B
- d) None of these

22. Waysons staining technique is required for identification of

- a) *Asstridia tetani*
  - b) *Yersiena pestis*
  - c) *Bacillus steothermorphilus*
  - d) *Streptococcus faecacis*
23. If a bacteriology laboraotroy needs to keep certain chemical materials dry, the apparatus used will be a:
- a) Dessicator
  - b) Vacuum
  - c) Buret
  - d) Separatory funnel
24. Polychrome methylene blue is encountered with
- a) Flagella staining
  - b) Denonstration of the capsule
  - c) Spore demonstration
  - d) Mcfadyeans reaction
25. A laboratory technician, properly dressed in white parts, labcoat, and shoes prepares to lease the laboratory for much. In addition to washing down the bench with disinfectant and washing his/ her lands, for safety's sake one should also
- a) Put on safety gurgles
  - b) Cip coffee on the bench
  - c) Remove polyring gloves and place
  - d) Remove labcoat
26. Which of the following describes a differential stain
- a) Where different bacteria stain similarly to a common staining technique

- b) Where only one stain is used and all bacteria stain similarly
  - c) Where the background is stained by an acidic dye such as nigrosine
  - d) Where structures of bacteria such as spores, capsules and granules are demonstrated
27. Which of the following substances inhibits bacteria multiplication when it is added to a culture
- a) Bacteriostatic substance
  - b) Disinfectant
  - c) Sterilizing agents
  - d) Bactericidal substance
28. Characteristics of a bacteria capsule include:
- a) It is composed of a peptidoglycan
  - b) Plays a role in bacterial motility
  - c) All bacteria have one
  - d) It is an important mechanism for protecting
29. Which of the statements below are false about prokaryotes
- a) Presence of linear chromosomes
  - b) Absence of nucleolus
  - c) Absence of mitochondria
  - d) Absence of nuclear envelope



30. Movement of DNA from one bacteria to another through a tubular bridge or pilus

- a) Transduction
- b) Transfusion
- c) Conjugation
- d) Transposition

**SECTION B ESSAY (60marks)**

1. Discuss differential staining techniques **(20marks)**
2. With examples discuss differences types of culture medias **(20marks)**
3. Discuss the process of autoclaving giving FIVE advantages of this methods of sterilization

**(20marks)**