



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences

DEPARTMENT OF **MEDICAL SCIENCES**

DIPLOMA IN MEDICAL LABORATORY SCIENCES

(DMLS 11M)

AML 2250: MEDICAL BACTERIOLOGY

SPECIAL/SUPPLEMENTARY: EXAMINATIONS

SERIES: February 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 (40MARKS)

1. Which of the following media is used for anaerobic organisms?
 - a) Nutrient agar deep
 - b) McIntosh- fildes anaerobic jar
 - c) Nutrient agar plate
 - d) Blood agar

2. Which of these media would support the growth of mycobacterium?
 - a) Charcoal cephalixin agar
 - b) Lowenstein jeinsen medium
 - c) Loeffler's medium
 - d) Newyork City medium

3. The following statements are two about TCBS except
 - a) Composed of Thiosulphate- citrate, sucrose and Thymol blue indicator
 - b) Used for culture of cholera
 - c) It is a red media
 - d) Used for culture of campylobacter

4. All are correct about sample collection except:
 - a) Adequate quantity
 - b) Should not represent the infectious process
 - c) Contamination must be avoided by using antiception precartions
 - d) Container should not be labeled

5. Which of the following is not true about the coagulase test?
 - a) The test is used to differentiate staphylococcus aureus from S.epidermidis
 - b) Coagulase causes plasma to clot by converting fibrinogen to firbin
 - c) Two types of coagulase are produced by most of staph aureus
 - d) Free coagulase is detected with slide test.

6. DNase agar differentiate;
 - a) Staphylococcus from streptococcus
 - b) Staph aureus from other staphyococcus
 - c) Dipheteria from clostridium
 - d) Neisseria from diphtheria

7. Which of these statement is correct about rickettsia?
 - a) Cause typhus disease
 - b) Is obligate parasite
 - c) Can replicate outside the host
 - d) By of Giemsa stanins organism red

8. Which of the following is correct about campylobacter
 - a) In ret smear stool : darting mortility ("seagull" or "Comma") organisms are seen
 - b) Is microaerophilic
 - c) The optimal temperature for growth is 37°C

- d) *C jejuni* is an important cause of diarrhea , in children and young adults
9. Which of the following statement is true about *V. Cholerae*
- IS comma shaped Gram-negative rods motile by single polar flagellum, (darting motility).
 - Does not ferment glucose, maltose, and sucrose, with production of acid only .
 - Gives a positive cholera-red reaction
 - Oxidase negative
10. Urea breath test is diagnostic for
- X. Cholera*
 - Campylobacter*
 - Helicobacter*
 - Spirochetes*
11. Drum stick appearance is characteristic to:
- Clostridium tetani*
 - Clostridium Welch*
 - Clostridium botulinum*
 - Clostridium difficile*
12. The fir tree pattern in gelatin is a characteristic of which organism?
- Bacillus anthracis*
 - Corinebacteria perfringens*
 - Clostridium perfringens*
 - Treponema palladium*
13. In the decolouring step of the acid –fast stain, which reagent is used?
- Acid – alcohol
 - Alcohol –acetone
 - Carbol fuchsin
 - Methylene blue
14. Certain strains of *proteus* agglutinate the sera from patients with typhus fever, this phenomenon is called?
- Dienes phenomenon
 - Wasserman reaction.
 - Weil felix reaction
 - Rheumatoid reaction
15. The following indicators are incorporated in TSI-medium
- Bromothymol blue
 - Ferric iron
 - Phenol red
 - Neutral red
16. Which of the organisms are halophiles?
- Mycobacterium arium*
 - Pseudomonas aeruginosa*
 - Vibrio cholera*

- d) *Clostridium tetani*
17. Gram positive bacilli showing Chinese letter arrangement is characteristic of
- Clostridium welchi*
 - Bacillus anthracis*
 - Camphylobacter jejuni*
 - Corynebacteria diphtheria*
18. When carrying out coagulase test, a positive result is indicated by?
- Efferevescene
 - Agglutination
 - Fine clumping
 - Bubbling
19. Stormy clot reaction is useful in identification of?
- Clostridium tetani*
 - Clostridium defficile*
 - Clostridium botulinum*
 - Clostridium perfringens*
20. The following organisms can cause gas ganerene except?
- Clostridium species*
 - Anaerobic streptococci
 - Salmonella entetitidis*
 - Khebsiella rhinoscleromatis*
21. The following statement is true on pathogenesis of tetanus
- Germination of spores initiates the infection
 - Spores germinate aerobically
 - Tetanoplasmin Toxin is absorbed by motor nerve endings
 - All the above.
22. Which of these bacteria exhibit swarming characteristics on blood agar?
- Pseudomonas aeruginosa*
 - Proteus mirabilis*
 - Bacillus cereus*
 - Clostridia tetani*
23. Which of the following pigments are associated with *pseudomonas*
- Yellow golden when grown on nutrient agar
 - Yellow fluorescein
 - White pigment
 - Black Pymelanin
24. Melioidosis is an appotunistic infection endemic in south east Asia, Africa among others this disease is caused by which bacteria ?
- Bukholderia pseudomallel*
 - Pseudomonas cepacia*

- c) *Pseudomonas aeruginosa*
 - d) All the above
25. The following is true of tubercle bacilli
- a) Are slow growers
 - b) Are obligate parasites
 - c) Are non –acid fast
 - d) Are facultative
26. The following is true of genes mycoplasma
- a) They all cause human disease
 - b) They are highly pleomorphic
 - c) They are gram positive
 - d) Are poorly stained by giemsa

SECTION B ESSAY (60MARKS) Answer all questions

Question ONE

After a day of having fun at the swimming pool, a three year old child was admitted five days later with severe pain in the right ear, the ear was inflamed and greenish pus discharge was coming out. The clinician upon examination thought that the child had infection with *pseudomonas*. Discuss the steps involved in the recovery of this organism from ear swab **(20marks)**

Question TWO

Write short notes on the following

- a) Anaerobic culture **(5marks)**
- b) Bacterial spores **(5marks)**
- c) Principal of coagulase test **(5marks)**
- d) Causes of gram variability **(5marks)**

Question THREE

Discuss antibiotic susceptibility test

(20marks)