TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

BMLS

AML : 4202 MEDICAL BACTERIOLOGY I

SPECIAL/ SUPPLIMENTARY EXAMINATION

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Pick Date Sep 2018

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No choose Sect/Quest. Attempt Choose instruction.

Circle the correct answer in section A.

Section A

1. The following is true about enrichment medium except that, the medium_____

a) Is selective
b) Allows fastidious bacteria to grow
c) Can be used for transport of specimen
d) Contain inhibitor
e) Can be used to isolate specific bacteria

2. Bacteria that grow in the presence of reduced oxygen tension are_____

a) Facultative anaerobes
b) Anaerobes
c) Microaerophilic
d) Facultative aerobes
e) Aerotolerant

3. Which of the following phase of the bacterial growth curve that fresh nutrient is available?

a) Early decline
b) Log phase
c) Stationary
d) Lag phase
e) Decline phase

4. Autoclaved agar media is cooled in water bath set at 45°C In order to_____

a) To prevent the agar from solidifying
b) To avoid loss of nutrients
c) To allow agar to solidify
d) To kill bacteria
e) To dissolve the agar

5. The lipopolysaccharides in bacteria are found in/on_____

a) Gram negative cell wall
b) Cytoplasmic membrane
c) Ribosomes
d) Gram positive cell wall
e) Capsule

6. The role of agar in media is to _____

a) Give colour to the medium
b) To dissolve complex materials
c) Provide nitrogen
d) Stabilize
e) Solidify the media

7. Theory of spontaneous generation stated that_____

a) Bacteria were cosmopolitan
b) House flies originated from maggots
c) Bacteria are Gram positive and Gram negative
d) Living things were made up of small boxes
e) Living things originated from nonliving organic matter

8. The Archaea can be described as_____

a) Traditional bacteria
b) Prions
c) Bacteria of extreme environments
d) Halotolerant bacteria
e) Fungi like organisms

9. The optimum pH of Vibrio is 8.6, the bacteria is _____

a) Acidophile
b) Neutrophile
c) Alkalophile
d) Alkalotolerant
e) Acidotolerant

10. *Serratia* in nutrient agar is characterized by_____

a) Colourless colonies
b) White colour
c) Flagellation
d) Yellow pigment
e) Red pigmentation

11 Which of the following Gram stain reagent is the secondary stain?

a) Crystal violet
b) Safranin
c) Iodine
d) Methylene blue
e) Acetone

12. What is the main function of fimbriae?

a) Used for attachment
b) Assists bacteria in motility
c) Protects bacteria from phagocytosis
d) Resist antimicrobial agents
e) Metabolic structure

13. Which of the following bacteria appear as a bunch of grapes under the n microscope?

a) *Candida*
b) Staphylococcus
c) *Neisseria*
d) Bacillus
e) Sarciana

14. Pink colonies in MacConkey are observed as result of_____

a) Non lactose fermentation
b) Glucose fermentation
c) Lactose fermentation
d) Discoloration of MacConkey
e) Haemolysis

15. Pathogenic bacteria mainly grow at _____

a) 37°C
b) 46.5°C
c) 45°C
d) 25°C
e) 5°C

16. The following is true about antimicrobial test except _____

a) Enriched media is used
b) The media is selective
c) Control bacteria is used
d) Results are observed macroscopically
e) young cultures are used

17. Break down of urea by urease is detected by observing_____

a) Red colour after adding Kovacs reagent
b) Black colour in TSI
c) Coagulation
d) Blue color
e) Pink colour

18. Joseph Lister is associated with the discovery of_____

a) Antibodies
b) Antiseptic agents
c) Antibiotics
d) Mycobacterium tuberculosis
e) Caesarian sections

19. Which of the following protect bacteria from injury when the cell are stored in minus 80°C?

a) Distilled water
b) Glycerol
c) Liquid CO_2
d) Yeast extract
e) Methanol

20. The temperature of an autoclave required to eliminate bacteria spores is_____

a) 100°C
b) 36.5°C
c) 44°C
d) 176°C
e) 121°C

21. Bacterial spores can be produced in the following conditions except_____

a) In nutrient deficient medium
b) In dry conditions
c) In high temperatures
d) In enriched medium
e) In high salt concentration

22. Who among the following is referred to as the father of medical microbiology?

a) Louis Pasteur
b) Alexander Fleming
c) Robert Koch
d) Antoni van Leeuwenhoek-
e) Aristotle

23. Identification of bacteria by somatic or flagellum antigen is called_____

a) Biotyping
b) Invasive procedures
c) Phage typing
d) Serotyping
e) Antimicrobial typing

24. The following statements on normal flora is true except, the bacteria _____

a) Protect the host from invading bacteria
b) Cannot cause infection
c) Can be found on the skin
d) Occur in large numbers in the intestine
e) Can cause opportunistic infections

25. Which one of the following bacterial structure is associated with conjugation?

a) Mono flagellum
b) Fimbriae
c) Peptidoglycan
d) Pili
e) Capsule

26. Which of the following medium has refined agar
a) Mueller Hinton
b) Nutrient broth
c) MacConkey agar
d) Saboroud agar
e) Peptone water

27. In bacterial taxonomy, Enterobacteriaceae is a/an _____

a) Phyla
b) Order
c) Species
d) Genus
e) Family

28. Reduced media is used for culturing_____

a) Few bacteria
b) Bacteria with long generation time
c) Capneic bacteria
d) Anaerobes
e) Strict aerobes

29. Dry oven sterilization is used to sterilize the following

a) Pure water
b) Culture media
c) Agar only
d) Plastic Petri dish
e) Heat labile supplements

30. Which of the following flagella is associated with *Treponema*?

a) Internal flagella
b) Monotricus flagellum
c) Peritrichous
d) Lophotrichous
e) Amphitrichous

Section B

31.

a) Describe the different types of sterilization in the laboratory (10 Marks)

b) Illustrate the inoculation technique that is used to get distinct colonies (10 Marks)

Q32

(i) Describe with relevant examples the classification of bacteria according to
    a) Oxygen requirements (6 Marks)
    b) pH requirements (4 Marks)
(ii) Discuss the preparation of blood agar (10 Marks)