



**TECHNICAL UNIVERSITY OF MOMBASA**

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**FACULTY OF APPLIED AND HEALTH SCIENCES**

**DEPARTMENT OF MEDICAL SCIENCES**

**UNIVERSITY EXAMINATION FOR:**

**DEGREE**

**AML 4211 : MEDICAL BACTERIOLOGY II**

**END OF SEMESTER EXAMINATION**

**SERIES: APRIL 2016**

**TIME: 3 HOURS**

**DATE: Pick Date May 2016**

**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. Infection caused by consuming refrigerated rice can be caused by \_\_\_\_\_

- a) *Vibrio cholerae*
- b) *Bacillus cereus*
- c) *Clostridium botulinum*
- d) *Salmonella typhi*
- e) *Bacillus subtilis*

2. Which of the following is a unique characteristic of stained *Corynebacterium*?

- a) Palisade arrangement
- b) Long Gram negative
- c) Cub shaped
- d) Appear as Chinese letter
- e) Arranged in chains

3. Which of the following bacteria is vector borne?
- a) *Yersinia enterocolitica*
  - b) *Plasmodium falciparum*
  - c) *Yersinia pestis*
  - d) *Shigella dysenteriae*
  - e) *Streptococcus pneumoniae*
4. Which of the following bacteria require X or V factors for growth
- a) *Brucella*
  - b) *Klebsiella*
  - c) *Nisseria*
  - d) *Clostridia*
  - e) *Haemophilus*
5. The following is correct about Cary Blair medium except, the medium\_\_\_\_\_
- a) Is semi solid
  - b) Retains viability of bacteria
  - c) Do not allow overgrowth of contaminants
  - d) Is enriched
  - e) Is portable
6. Enterohamorrhagic *Escherichia coli* can cause the failure of the following organ\_\_\_\_\_
- a) Kidney
  - b) Heart
  - c) Liver
  - d) Eyes
  - e) Intestines
7. Which of the following specimen is routinely cultured in a safety cabinet?
- a) Rectal swabs
  - b) Urethral swabs
  - c) Sputum
  - d) Pus
  - e) Rice water stool
8. Which of the following Enterobacteriaceae is not a member of the intestinal flora
- a) *Citrobacter freundii*
  - b) *Shigella boydii*
  - c) *Proteus mirabilis*
  - d) *Escherichia coli*
  - e) *Klebsiella oxytoca*

9. ST and LT toxins are differentiated by their tolerance to \_\_\_\_\_

- a) High pH
- b) Low pH
- c) Frozen temperature
- d) heat
- e) Osmotic pressure

10. API Candid is used for \_\_\_\_\_

- a) Biotyping of *Neisseria*
- b) Gram staining fungi
- c) Biotyping of *Candida*
- d) Treating opportunistic candidiasis
- e) Identification of *Enterobacteriaceae*

11. Microaerophilic conditions provide optimum environment for the isolation of \_\_\_\_\_

- a) Pathogenic *Staphylococcus*
- b) *Pseudomonas*
- c) *Campylobacter*
- d) *Aeromonas*
- e) *Mycobacterium*

12. Which of the following obligate intracellular bacteria causes urethral discharge?

- a) Chlamydia
- b) *Neisseria*
- c) *Treponema*
- d) *Candida*
- e) *Haemophilus*

13. Which of the following is observed in the ETEST?

- a) E-antigen
- b) Motility
- c) Hemolysis
- d) Effervescence
- e) Antimicrobial susceptibility

14. Which of the following is not a characteristic of the family *Pseudomonadaceae*?

- a) Obligate aerobes
- b) Oxidase negative
- c) Gram negative rods
- d) Motile
- e) Non glucose fermentors

15. Mannitol salt agar is a selective media which is used for the isolation of\_\_\_\_\_
- Bacillus subtilis
  - Mycobacterium tuberculosis
  - Vibrio parahaemolyticus
  - Vibrio cholerae O1
  - Staphylococcus aureus
16. Titration of serum in the Widal test is performed to
- Dilute antibodies against Salmonella typhi
  - Dilute S. typhi antigen
  - Concentrate antibodies
  - Concentrate antigen
  - Reduce the S.typhi cells in blood
17. Which of the following is not associated with prolonged use of antibiotics?
- Drug resistance
  - Gas gangrene
  - Pseudo-membranous colitis
  - Displacement of normal flora
  - Opportunistic infections
18. The following statements are correct on syphilis except\_\_\_\_\_
- The causative agent can be cultured in enriched broth media
  - Can be diagnosed by antigen- antibody tests
  - It is a sexually transmitted disease
  - Is caused by Treponema pallidum
  - The causative agent can be viewed by dark field microscopy
19. Which of the following selective medium is used for the isolation of *Neisseria gonorrhoeae*?
- Chocolate agar
  - Mueller Hinton
  - Thayer Martin
  - Sheep blood agar
  - Horse blood agar
20. The association of specific bacteria with particular disease was first proposed by\_\_\_\_\_
- Louis Pasteur
  - Edward Jenner
  - Antony Van Leewenhoeck
  - Robert Koch
  - Center for Disease Control

21. Which of the following supplement is used for detecting lipase in Macconkey
- Tween 80
  - thiosulphate
  - Serum
  - Lactose
  - Agar
22. Which of the following medium inhibits swarming of Proteus in urine cultures?
- CLED
  - Blood agar
  - MacConkey
  - Dry nutrient agar plates
  - Mueller Hinton
23. The following method is based on the enzymatic activity of bacteria on given substrates \_\_\_\_\_
- Genotyping
  - DNA hybridization
  - Serotyping
  - Agglutination tests
  - Biotyping
24. Lactobacilli prevent opportunistic infections by \_\_\_\_\_
- Competing for nutrients
  - Producing alkaline products
  - Creating an acidic environment
  - Creating anaerobic conditions
  - Producing filaments
25. Which of the following antibiotics is not included in medium used for isolation of Mycobacterium tuberculosis \_\_\_\_\_
- Polymyxin B
  - Amphotericin B
  - Nalidixic acid
  - Ethambutol
  - Trimethoprim
26. The McFarland standard tubes are used for \_\_\_\_\_
- Controlling the age of bacteria
  - Pour plate technique
  - Motility tests
  - Determining concentration of bacteria in saline
  - Sporulation of bacteria

27 A rapid biochemical test for detecting *Helicobacter pylori* in sample is the \_\_\_\_\_

- a) Urease
- b) Oxidase
- c) Motility
- d) Hippurate hydrolysis
- e) Gram stain

28. *Klebsiella* colonies appear as in \_\_\_\_\_ in blood agar

- a) Swarming
- b) -Haemolytic
- c) flat
- d) Muroid
- e) Rhizoidal

29. Which of the following bacteria can be isolated from greenish pus swab?

- a) *Pseudomonas*
- b) *Proteus*
- c) *Staphylococcus*
- d) *Streptococcus*
- e) *Aeromonas*

30. Which of the following test is not used in differentiating species of *Streptococcus*

- a) Lancefield classification
- b) Type of diseases
- c) Biochemical tests
- d) Type of haemolysis
- e) Motility

## Section B

Q31.

a) Describe antimicrobial susceptibility testing of bacterial pathogens in the laboratory (10 Marks)

a) Discuss microbiological investigation of a urine sample (10 Marks)

Q32.

Bloody stool and rice watery stools were collected from an area experiencing an outbreak of diarrhoea diseases. Discuss in details the microbiological diagnosis of the samples under the following, specimen collection, transport, culture and identification (20 Marks)