



**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. The following statements on the Koch's postulate are true except
  - a) Disease symptoms must be observed
  - b) The causative bacteria can be isolated in pure forms
  - c) Pathogenicity is associated with the causative agent
  - d) The causative agent must be culturable
  - e) Disease symptoms must be observed in the experimental host
  
2. Which of the following supplement is used for detecting lecithinase in Clostridia
  - a) Egg yolk
  - b) Blood
  - c) Serum
  - d) Urea
  - e) Kanamycin

3. Which of the following bacteria cause swarming in blood agar plates?
- a) Proteus
  - b) Sarcina
  - c) Pseudomonas
  - d) Norcadia
  - e) Mycobacteria
4. The preferred method of identifying *Escherichia coli* pathotypes is \_\_\_\_\_
- a) Culture methods
  - b) Phenotyping
  - c) Agglutination tests
  - d) Biotyping
  - e) PCR
5. Reduction of the following normal flora can lead to candidiasis
- a) Bacillus subtilis
  - b) Mobilincus
  - c) Lactobacilli
  - d) Gardenella vaginalis
  - e) Candida albicans
6. Isolation of Staphylococcus from mixed culture can be achieved by \_\_\_\_\_
- a) Observing  $\beta$ - haemolytic colonies
  - b) Inoculating sample s in sodium free medium
  - c) Incubating cultures in candle jar
  - d) Using horse blood medium
  - e) Increasing concentration of Sodium chloride in media
7. The gold standard for laboratory diagnosis of typhoid is
- a) Stool culture
  - b) Blood culture
  - c) Widal test
  - d) Titration
  - e) Checking for occult blood
8. Which of the following disease is associated with *Clostridium difficile*?
- a) Gas gangarene
  - b) Pseudo-membraneous colitis
  - c) Food poisoning
  - d) Peptic ulcers
  - e) Drug resistant pneumonia

9. The following statements are correct on the VDRL test except\_\_\_\_\_

- a) *Treponema pallidum* colonies are serotyped
- b) Patient serum is required
- c) It is a test for syphilis
- d) Ox cardiolipin antigen is used
- e) Test is based on antigen-antibody reaction

10. Which microbe causes conjunctivitis and is transmitted to neonates during delivery\_\_\_\_\_

- a) *Neisseria meningitidis*
- b) *Candida albicans*
- c) *Neisseria gonorrhoeae*
- d) *Branhamella catarrhalis*
- e) *Streptococcus pyogenes*

11. The Mantoux test is \_\_\_\_\_

- a) An acid fast staining method
- b) A skin test for tuberculosis
- c) Rapid culture method
- d) Sensitivity assay
- e) Chest X-ray for pneumonia patients

12. Which of the following media contain refined quality agar?

- a) Nutrient agar
- b) Blood agar
- c) Motility medium
- d) Mueller Hinton agar
- e) Transport medium

13 Peptic biopsy samples can be used for the laboratory detection of\_\_\_\_\_

- a) *Helicobacter pylori*
- b) *Proteus mirabilis*
- c) *Campylobacter jejuni*
- d) *Bacteroides* species
- e) Enterohaemorrhagic *Escherichia coli*

14. Mycoplasma appear as\_\_\_\_\_ colonies in blood agar

- a) Swarming
- b)  $\beta$ -Haemolytic
- c) Mucoid
- d) Cooked egg
- e) Rhizoidal

15. Which of the following *Vibrio* species is associated with food poisoning?

- a) parahaemolyticus
- b) cholerae
- c) vulnificus
- d) fluvialis
- e) aureus

16. Emetic diarrhea is a food borne disease which is caused by \_\_\_\_\_

- a) *Staphylococcus aureus*
- b) *Bacillus cereus*
- c) ETEC
- d) *Salmonella typhi*
- e) *Bacillus anthracis*

17. Which of the following bacterium produce diphtheria toxin

- a) Clostridia
- b) Bordetella
- c) *Franciella*
- d) *Corynbacterium*
- e) *Bacillus thurengiesis*

18. Enrichment for isolation of *Yersinia enterocolitica* from stool samples is carried out by\_\_\_\_\_

- a) Centrifugation
- b) inoculating selenite fecal broth
- c) storing the samples at 4°C
- d) inoculating alkaline peptone water
- e) using bile free medium

19. Which of the following is used for Lancefield classification of *Streptococcus*

- a) antimicrobial susceptibility
- b) Type of diseases
- c) Biochemical tests
- d) Type of haemolysis
- e) Cell wall carbohydrate antigens

20. *Haemophilus dureyi* is most likely to be isolated from\_\_\_\_\_

- a) Throat
- b) Urine
- c) Cerebral spinal fluid
- d) Urethral swabs
- e) Genital ulcers

21. Which of the following is not a bacterium although it is reported by microbiologists?
- a) *Neisseria*
  - b) *Vibrio*
  - c) *Candida*
  - d) *Campylobacter*
  - e) *Staphylococcus*
22. Which of the following conditions is required for the isolation of *Campylobacter*?
- a) Anaerobic conditions
  - b) Increased Oxygen tension
  - c) reduced oxygen
  - d) Facultative incubators
  - e) Strict aerobic conditions
23. Which of the following bacteria is routinely grown in tissue culture?
- a) Chlamydia
  - b) Mycoplasma
  - c) Brucella
  - d) Helicobacter
  - e) Rotavirus
24. Which of the following is observed in the ELECK test?
- a) coagulation
  - b) Blue color
  - c) Hemolysis
  - d) Red color
  - e) Precipitation
25. Which of the following is used to differentiate the family *Enterobacteriaceae* from *Pseudomonadaceae*?
- a) Motility
  - b) Oxidase test
  - c) Pigmentation
  - d) Growth in blood agar
  - e) Wound infections
26. Robertson cooked media is recommended for the transportation of \_\_\_\_\_
- a) Typhoid specimens
  - b) urine
  - c) DNA material
  - d) Specimen containing Clostridia
  - e) Proteolytic bacteria

27. Traveler's diarrhea is associated with

- a) ETEC
- b) EIEC
- c) EPEC
- d) EHEC
- e) STEC

28. Handling of the following bacteria must be carried out in a Biosafety cabinet

- a) *Salmonella typhi*
- b) Zika virus
- c) *Bacillus anthracis*
- d) *Shigella dysenteriae*
- e) MDR *Staphylococcus aureus*

29. Which of the following statement on the normal flora is incorrect

- a) Can protect host from infection
- b) Cannot cause infection
- c) Can occupy several niches of the body
- d) Cannot be motile
- e) Can be used as probiotics

30. Bacterial endotoxins are mainly derived from

- a) Flagella antigen
- b) Adhesins
- c) Released proteins
- d) Cell wall lipopolysaccharides
- e) Mycolic acids

## Section B

31. Discuss the classification of the following microorganisms

- a) Pathogenic *Escherichia coli* (10 Marks)
- b) *Streptococcus* species (10 Marks)

Q32

Discuss in details the conventional methods that are employed in culture and identification of pathogenic bacteria in a clinical microbiology laboratory (20 Marks)