



TECHNICAL UNIVERSITY OF MOMBASA

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.

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 - 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) *Neisseriameningitidis*
- b) *Candidaalbicans*
- c) *Neisseriagonorrhoeae*
- d) *Branhamellacatarrhalis*
- e) *Streptococcuspyogenes*

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) *Campylobacterjejuni*
- d) Bacteroides species
- e) Enterohaemorrhagic *Escherichia coli*

14. Mycoplasma appear as _____ colonies in blood agar

- a) Swarming
- b) -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) Francisella
- d) Corynebacterium
- e) *Bacillus thuringiensis*

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 ducreyi* 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)