



UNIVERSITY EXAMINATIONS
MAIN CAMPUS
THIRD YEAR SECOND SEMESTER EXAMINATIONS
FOR THE DEGREES OF
BACHELOR OF SCIENCE IN MEDICAL LABORATORY
COURSE CODE : BML 326
COURSE TITLE : CLINICAL BACTERIOLOGY
DATE: 23RD MAY 2019 TIME: 3.00 -5.00 PM

INSTRUCTIONS TO CANDIDATES

This examination paper is divided into sections A, B and C

Answer the questions according to the accompanying instructions

Answer the questions in the university examination booklets provided

Do NOT write your name on the answer scripts: write your university registration number only.

Write your registration number on every new leaf used of the answer script

MMUST observes ZERO tolerance to examination cheating

This paper consist of 6 printed pages. Please turn over

SECTION A: MULTIPLE CHOICE QUESTIONS

INSTRUCTIONS

1. This section consists of twenty(20) multiple choice questions,
2. The section carries a maximum of 20 marks
3. Each question has a stem and four (4) options, of which there is only one correct option.
4. For each question indicate the correct by writing the corresponding letter.

SECTION A: MULTIPLE CHOICE QUESTIONS

1. Sustainable media for cultivation of *Bordetella pertusis* is
 - a. Chocolate agar
 - b. CLED
 - c. Bordet gengou
 - d. Loeffler slope
2. Natural reservoirs host for *Yersinia pestis* is
 - a. Ticks
 - b. Housefly
 - c. Wild rodents
 - d. Man
3. *Brucella abortus*
 - a. Cause abortion in man
 - b. Cause abortion in pigs
 - c. Does not cause abortion in man
 - d. Cause undulating fever in man
4. *Acocobacilli* that cause chancroids is
 - a. *Haemophilus influenzae*
 - b. *Streptococcus*
 - c. *Bordetella pertusis*
 - d. *Haemophilus ducreyi*
5. Lowenstein Jensen media is used to isolate
 - a. *Streptococcus* species
 - b. *Proteus* species
 - c. *E. coli*
 - d. *Mycobacterium tuberculosis*
6. In Brucellosis 2-mercaptoethanol agglutination test will detect the following antibodies
 - a. Igm
 - b. IgE and igm
 - c. IgA
 - d. IgG

7. Which of the following is associated with food poisoning
 - a. *Clostridium botulinum*
 - b. *Clostridium tetani*
 - c. *Salmonella typhi*
 - d. *Shigella sonnei*
8. Oxidase is produced by
 - a. *Pseudomonas aeruginosa*
 - b. *Staphylococcus saprophytica*
 - c. *Streptococcus pyogenes*
 - d. *E. coli*
9. Schick test is used to detect the following toxin
 - a. *Clostridium* toxin
 - b. *Diphtheria* toxin
 - c. *Salmonella* toxin
 - d. *Vibrio* toxin
10. Nagler's reaction aids the laboratory in the identification of
 - a. *Vibrio cholera*
 - b. *Salmonella typhi*
 - c. *Brucella abortus*
 - d. Alpha toxin produced by *Clostridium perfringens*
11. Double zone of hemolysis on blood agar plate are associated with
 - a. *Streptococcus pyogenes*
 - b. *Staphylococcus aureus*
 - c. *Clostridium perfringens*
 - d. *E. coli*
12. *Bacillus anthracis* causes
 - a. Wool sorter disease
 - b. Typhoid
 - c. Food poisoning
 - d. Undulant fever
13. The round terminal spore gives to the organism what has been called a "drum stick appearance" is
 - a. *Clostridium botulinum*
 - b. *Clostridium tetani*
 - c. *Bacillus anthracis*
 - d. *Clostridium welchii*

14. *Corynebacterium diphtheria*
- Is a gram negative
 - Easily decolourized by mineral acids
 - Exhibits marked pleomorphism in form of Chinese letters
 - Form spores
15. Differentiate between staphylococcus and streptococci may be based on
- Bile esculin
 - Bacitracin sensitivity
 - Coagulase reaction
 - Catalase reaction
16. Selenite – F broth is a selective enriched medium for which organism
- Salmonella
 - Proteus
 - Enterococci
 - Mycobacterium
17. Which of the following organism will give a positive reaction for ELEKS test
- Bacillus anthracis
 - Brucella abortus
 - Corynebacterium diphtheria*
 - Proteus morganii
18. The most commonest cause of enteric fever in Kenya is
- Salmonella typhi
 - Salmonella paratyphi
 - Salmonella typhimurium
 - Salmonella enteritidis
19. It is possible to differentiate salmonella from shigella by the following property
- Gram stain
 - Motility
 - Presence of capsule
 - Presence of spore
20. The most common site of infection with coliforms bacilli is
- Upper respiratory tract
 - Lower respiratory tract
 - Urinary tract
 - Gall bladder

SECTION B: SHORT ANSWER QUESTIONS (SAQs)

Instructions

1. This section has ten (10) short answer questions (SAQs),
2. The questions together carry a maximum of forty (40) marks
3. Answer all the questions.

1. Enumerate four purpose of acid fast stained smear (4 Mks)
2. State four risk factors of getting tuberculosis (4Mks)
3. Tabulate four differences between E. coli and Klebsiella (4 mks)
4. Describe haemolytic pattern observed when bacteria are cultured in Blood Agar (4 Mks)
5. Write the short on:-
 - a. Nagler's reaction (4 mks)
 - b. Satellitism test (4 mks)
6. Mention the stages of syphilis including remarkable features. (4 mks)
7. Discuss pathogenesis of plaque (4 mks)
8. Distinguish between photochromogen and scotochromogen (4 mks)
9. Write short notes on wayson staining technique technique (4 mks)

SECTION C: LONG ANSWER QUESTIONS (LAQs)

Instructions

- 1. This section has two long answer questions (LAQs)**
- 2. Each question carries a maximum of twenty (20 marks)**
- 3. Answer both questions.**

1. A farmer was pierced by a nail and within a few days he developed anaemia and gas gangrene
 - a. Name the most likely causative organism. (2 Mks)
 - b. Explain systematically how you can isolate and identify the organism (18Mks)

2. Patient X was brought to you as Laboratory Manager at County referral Hospital with complains of diarrhea which appeared rice watery and clinically looked dehydrated with sunken eyes:
 - a. What is the aetiological agent? (2 Mks)
 - b. How would you isolate aetiological agent in your Laboratory (13Mks)
 - c. Mention five ways of prevention and control of the disease above: (5Mks)