Candidate Number……

"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

SLS 204 BACTERIOLOGY

END OF SECOND SEMESTER EXAMINATIONS

APRIL/MAY 2018

LECTURER: MR CHITURI

DURATION: 3 HOURS

INSTRUCTIONS

1. Write your candidate number on the space provided on top of each page
2. Answer **all** questions in sections A on the question paper.
3. Answer **all** questions in section B on separate answer sheets provided.
4. Answer any **3** questions in section C on separate answer sheets provided
5. The mark allocation for each question is indicated at the end of the question
6. Credit will be given for logical, systematic and neat presentations in sections B and C

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Section A

Answer all questions in this section by encircling the correct response T(True) or F(False)

1. Concerning bacteriology laboratory safety

T F There are four risk groups,namely Risk group 1,Risk group 2 and Risk group 3.

T F *Salmonella typhi* is a bacteria classified under biosafety level 2.

T F Applying cosmetics in the bacteriology laboratory has nothing to do with safety.

T F Fume cupboards are only used to protect micro-organisms that are transmitted through aerosols.

T F There are four biosaferty levels.

2. Regarding bacteria shapes -------

T F *Mycobacterium* species are cocci.

T F *Nesseira* species are rod shaped.

T F *Shigella* species are spiral shaped.

T F Bacterial shape is easily seen on a gram stained smear.

T F The shape of the bacterial determines its virulence.

3. *Staphylococcus aureus*------

T F is responsible for the largest proportion of healthcare-associated bacterial infections

T F is usually spread by direct skin contact

T F is an anaerobic toxin-producing bacterium

T F cannot be identified by using a 'gram-staining' test.

T F can be identified on Mannitol salt agar.

4. Regarding media….

T F blood agar is a differential media.

T F TCBs is used to isolate *Vibrio cholerae.*

T F Cary-blair medium is an example of a transport media.

T F XLD is an indicator media.

T F Basic media can be enhanced to become enriched media.

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5. Concerning Urinary Tract Infection…..

T	F	*Proteus* species are common
T	F	*Shigella* species can be isolated.
T	F	*E.coli* can never be found as the causative organism.
T	F	gram positive organisms are the most notorius .
T	F	can be as a result of multiple infection with more than five bacterium.

6. The following areas of the human body are normally sterile

T	F	small intestines
T	F	colon
T	F	mouth
T	F	skin
T	F	vagina

7. The following factors control the growth of microorganisms

T	F	pH
T	F	moisture
T	F	Oxygen content
T	F	temperature
T	F	ions

8. The following can aide in bacterial virulence

T	F	endotoxins
T	F	exotoxins
T	F	capsules
T	F	enzymes such as coagulase
T	F	immune status

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9. In addition to *Mycobacteriumn tuberculosis*, the following pathogens are found in sputum

T F *Lactobacilli*

T F Viridans streptococci

T F *Streptococcus pneumoniae*,

T F *Staphylococcus epidermidis*

T F *Pseudomonas aeruginosa*

10. Regarding laboratory diagnosis of urine--

T F first midstream urine of the day is the most suitable for culture

T F If the specimen cannot be immediately delivered to the lab freeze at -20^0C.

T F When the delay is more than 2 hours, add boric acid

T F when the delay is more than 2 hours, add, bleach,

T F If the specimen cannot be immediately delivered to the lab refrigerate at 4-6^0C.

11.Concerning Lactose fermenting coliforms that have grown on CLED medium,the following is true concerning the next step.

T F inoculate on citrate media
T F inoculate in peptone water
T F perform indole test
T F perform a gram stain
T F perform a ZN stain

12. The following media are transport media
T F alkaline peptone water
T F blood agar
T F Maconkey
T F Cled
T F XLD

13.The following bacteria causes food poisoning
T F *S. aureus*
T F *B. cereus*
T F *C .jejuni*
T F *E. coli*
T F *L. monocytogenes*

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14.Concerning *Vibro cholerae*

T F gram positive cocci
T F comma shaped rods
T F darting motility
T F gram negative cocci
T F can not grow on culture

15. Concerning antibiotic classification

T F Penicillins are classified as Beta lactams
T F Cephalosporins are Beta lactams
T F Ceftriaxone are third generation cephalosporins
T F Kanamacyin is classified as aminoglycosides
T F Erthromycin are classified as macrolides

16. Concerning the mode of action of antibiotics

T F Quinolones target enzymes involved in DNA synthesis
T F Co-trimoxazole is a combination of trimethoprim and sulfamethoxazole in the ration of 1:4
T F Aminoglycosides inhibits protein synthesis
T F Macrolides inhibit protein synthesis by dissociation of the peptide chain.
T F All Beta lactams act on bacterial cell wall synthesis

17. Concerning *S. aureus*

T F it is coagulase positive
T F it is mannitol salt positive
T F it is DNAse positive
T F it is catalase negative
T F it is gram negative cocci

18. Concerning microbiology

T F a pathogen is a disease producing micro-organism
T F pathogenicity is the capacity to initiate a disease
T F virulence is the capacity to harm the host
T F infection is the multiplication of a parasite in a host
T F disease is a rare consquence of an infection.

19. Concerning Group A streptococcus

T F sometimes known as *S. pyogenes*
T F sometimes known as *S. agalactie*
T F are bacitracin senstive
T F are bacitracin resistant
T F Camp positive

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20. Concerning Group B streptococcus

T	F	are sometimes known as *S. pneumoniae*
T	F	also known as *S. pyogenes*
T	F	are Camp negative
T	F	are Camp positive
T	F	are hippurate hydrolysis positive

Section B:
Answer all questions in this section.
1.Write short notes on the following:

(i) Staphylococcus species. (5)

(ii) *Streptococcus species*. (5)

(iii)Listeriosis (5)

(iv)Mycobacterium tuberculosis(5)

(v) *Vibrio cholerae*. (5)

Section C
Answer three questions in this section.

1 . Discuss Safety in a TB laboratory(10)

b) Describe in detail how you would process a sputum sample.(10)

2. Discuss the different media types with examples (20).

3. ba) Concerning Normal Flora,with examples describe the following

i) symbionts (6)

ii) commensals (7)

iii) opportunists (7)

4. Name any five classes of antibiotics and describe their mode of action,giving an example of an antibiotic on each class(20).

5. What do you understand by the term bacteriology.Describe in detail what you understand by this terminology giving examples. (20)