



KENYATTA UNIVERSITY

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

(MEDICAL LABORATORY SCIENCE)

HML 308: CLINICAL BACTERIOLOGY II

2ND SEMESTER 2022/2023

TIME: 2 HOURS

INSTRUCTIONS:

SECTION A: ANSWER ALL QUESTIONS (4 MARKS EACH)

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| 1. Outline the prevention interventions in bacillary dysentery | 4 marks |
| 2. Outline the virulence factors associated with <i>Yersinia pestis</i> | 4 marks |
| 3. Describe the laboratory diagnosis of <i>Legionella pneumophila</i> | 4 marks |
| 4. Describe the pathogenesis of <i>Helicobacter pylori</i> | 4 marks |
| 5. Differentiate <i>Campylobacter jejuni</i> from <i>Campylobacter intestinalis</i> | 4 marks |

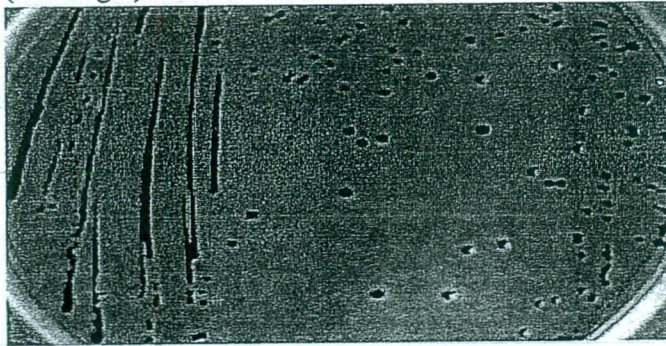
SECTION B: ANSWER ONE QUESTIONS (20 MARKS)

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| 6. Describe the pathogenesis of <i>Bordetella pertussis</i> | 20 marks |
| 7. Describe the pathogenesis of; | |
| a) Enterotoxigenic <i>Escherichia coli</i> | 10 marks |
| b) <i>Neisseria gonorrhoeae</i> | 10 marks |

SECTION C: ANSWER ALL QUESTIONS IN THE ANSWER BOOKLET (1/2 MARKS EACH)

1. Which of the following tests differentiates *Vibrio cholerae* from members of Enterobacteriaceae?
 - a) Indole
 - b) Oxidase
 - c) Nitrate
 - d) Vogesprousker
2. The following bacteria causes invasive/inflammatory associated diarrhea, except?
 - a) *Salmonella enterica*
 - b) *Campylobacter jejuni*
 - c) *Enteropathogenic Escherichia coli*
 - d) *Vibrio cholerae*

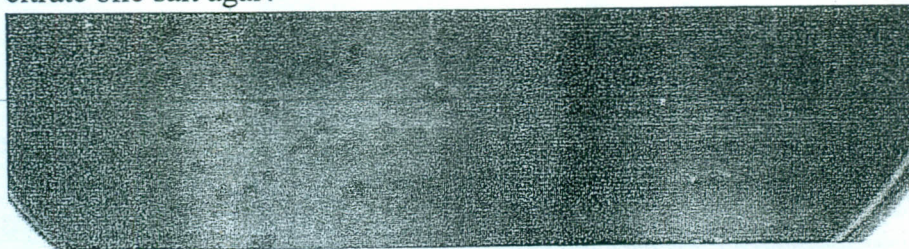
3. The following show an overnight stool culture, at 37°C, on Xylose lysine dec (XLD agar). Which of the following bacteria is likely to show the displayed results?



- a) *Escherichia*
 - b) *Salmonella*
 - c) *Shigella*
 - d) *Proteus*
4. The TSI agar reaction shown below is typical for the following bacteria, except?



- a) *Escherichia coli*
 - b) *Pseudomonas aeruginosa*
 - c) *Enterobacter cloacae*
 - d) *Klebsiella pneumoniae*
5. Which of the following *Vibrio* show the following colonial characteristics on thiosulphate citrate bile salt agar?



- a) *V. mimicus*
- b) *V. cholerae*
- c) *V. parahaemolyticus*

- d) *V. vulnificus*
6. Which one of the following is not an Enterobacteriaceae
- a) *Yersinia enterocolitica*
 - b) *Hemophilus influenzae*
 - c) *Shigella flexneri*
 - d) *Proteus mirabilis*
7. Cattle milk can be a source of:
- a) *Brucellacanis*
 - b) *Brucellamelitensis*
 - c) *Brucella abortus*
 - d) *Brucella suis*
8. Hemolytic-uremic syndrome (HUS) is caused by;
- a) Enterotoxigenic *Escherichia coli*
 - b) Enterohaemorrhagic *Escherichia coli*
 - c) Enteroinvasive *Escherichia coli*
 - d) Enteropathogenic *Escherichia coli*
9. Which of the following bacterial toxins abrogates host cell protein synthesis by removing adenine from 28S ribosomal RNA?
- a) Cholera toxin
 - b) Shiga toxin
 - c) Diphtheria toxin
 - d) Exotoxin A
10. Septicemia accounts for about 5-10% *Salmonella* infections in patients with the following underlying conditions, except?
- a) Sickle cell anemia
 - b) Cancer
 - c) Enterocolitis in children
 - d) Cystitis
11. Presence of neutrophils in a methylene blue-stained fecal specimen is a presumptive diagnosis of the following, except?
- a) *Shigella sonnei*
 - b) *Salmonella typhi*
 - c) *Escherichia coli*
 - d) *Campylobacter jejuni*
12. Which of the following is glucose and lactose non-fermenter?
- a) *Klebsiella pneumoniae*
 - b) *Enterobacter cloacae*
 - c) *Pseudomonas aeruginosa*
 - d) *Escherichia coli*
13. Which of the following bacteria is indole test negative?
- a) *Morganellamorganii*
 - b) *Proteus mirabilis*
 - c) *Proteus retgeri*

- d) *Proteus vulgaris*
14. For which one of the following enteric illnesses is a chronic carrier state MC develop?
- a) *Campylobacter enterocolitis*
 - b) Typhoid fever
 - c) *Shigella enterocolitis*
 - d) Cholera
15. Peptic ulcers are caused by;
- a) *Campylobacter jejuni*
 - b) *Helicobacter pylori*
 - c) *Vibrio cholerae*
 - d) *Salmonella typhi*
16. Which of the following bacteria characteristically swarm on blood agar?
- a) *Shigella dysenteriae*
 - b) *Proteus mirabilis*
 - c) *Salmonella typhi*
 - d) *Campylobacter jejuni*
17. Both *Vibrio cholerae* and *Aeromonas hydrophila* produce yellow colonies on thiosulphate citrate bile salt (TCBS) agar. The following tests can be used to differentiate the two organisms, except?
- a) Oxidase
 - b) Motility in distilled water
 - c) Arabinose fermentation
 - d) Aesculin hydrolysis
18. Undulating fever is associated with which of the following bacteria?
- a) *Salmonella typhi*
 - b) *Salmonella paratyphi*
 - c) *Brucella*
 - d) *shigella*
19. *Campylobacter* causes all the following clinical conditions, except?
- a) Enterocolitis
 - b) Pyelonephritis
 - c) Guillain- Barre' syndrome
 - d) Bacteremia
20. Which of the following bacteria factors X and V to grow?
- a) *Hemophilus influenzae*
 - b) *Bordetella pertussis*
 - c) *Legionella pneumophila*
 - d) *Acinetobacter baumannii*