Candidate Number……

"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES
DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES

NSLS 404 MICROBIOLOGY II

END OF SECOND SEMESTER EXAMINATIONS

NOVEMBER 2022

LECTURER: MRS K. ZVINOERA

DURATION: 3HRS

INSTRUCTIONS

Write your Student Number on the top of every page of this question paper

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Section A: Answer **ALL** questions onto this question paper
State whether each statement is True (T) or False (F)

Section B: Answer **ALL** questions on the separate answer sheet provided
Write your Student Number on every page that you use

Section C: Answer any **THREE (3)** out of **FIVE (5)** questions on the separate answer sheet provided
Write your Student Number on every page that you use

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SECTION A [40 marks]

Answer **ALL** questions

Circle True (T) **OR** False (F) onto this question paper. Some questions have more than one True (T) statement

1. Infection with Listeria monocytogenes may

T F (a) cross the placenta & cause spontaneous abortion
T F (b) Cause meningitis in immunosuppressed patients
T F (c) Maybe asymptomatic in healthy adults
T F (d) Be acquired through ingesting contaminated cold meats
T F (e) Lead to intravascular hemolysis

2. In Zimbabwe in the year 2022, there was mass measles vaccine ?

T F (a) For under 15 year olds
T F (b) After a measles outbreak that started in Mutare district
T F (c) After more than 50 measles related deaths
T F (d) Administered by riders for health
T F (e) For the girl child only

3. Poliomelytis

T F (a) May occur in under 15 year old age group
T F (b) May cause respiratory difficulties
T F (c) May be caused by diphtheria toxin
T F (d) May cause symmetric paralysis
T F (e) May cause asymmetric paralysis

4. Concerning common colds :

T F (a) 60% may be caused by rhinoviruses
T F (b) 15% may be caused by coronavirus
T F (c) 60% may be caused by adenovirus
T F (d) Rhinovirus induce mucus secretion via bradykinin release
T F (e) Require empirical antibiotic treatment

5. Virulence of group A Streptococcus is aided by

T F (a) Strains with M protein which are resistant to phagocytosis
T F (b) Streptokinase ability to break down fibrin, thus spreading the infection
T F (c) Erythrogenic toxin
T F (d) Beta hemolysis
T F (e) Hyaluronidase

6. In the hands of competent laboratory personnelle, malaria microscopy limit of detection is ?

T F (a) 32 parasites/ul

T F (b) 5000 parasites/ul
T F (c) 20 parasites/ul
T F (d) 100 parasites/ul
T F (e) 200 parasites/ul

7. Some examples of clinically significant anerobic infections are
T F (a) Brain abscess
T F (b) Gas gangrene
T F (c) Non-clostridial crepitant cellulitis
T F (d) Vincent's disease
T F (e) Thoracic empyema

8. Causes of query AFP stool inadequency include:

T F (a) AFP stool collected well after 14 days of onset of signs & symptoms
T F (b) Duchenne muscular dystrophy
T F (c) No date of collection
T F (d) No mark to say which is the first or second stool container
T F (e) No name on specimen container

SECTION B [20 Marks]

Answer ALL questions on the separate answer sheet provided

1. List the WHO global antimicrobial resistance and surveillance systems (GLASS priority pathogens) in most countries **[10].**

2. List the 12 essential elements of QMS **[10].**

SECTION C [75 Marks]

Answer any THREE (3) questions on the separate answer sheet provided. Each question carries 25 marks

1. Discuss the pathogenesis of bacteria that cause food poisoning and measures put in place to prevent bacterial food poisoning **[25].**
2. A result is as good as the specimen. Explain giving examples of sputum, CSF and stool for query Acute Flaccid Paralysis (AFP) investigation **[25].**

3. What is post exposure prophylaxis (PEP), explain giving example of Neisseria meningitidis **[25].**

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4. *In a Microbiology laboratory while processing ear swab culture, you notice that a resistant NLF has been isolated and sensitivity pattern established as resistant to most antibiotic discs. The previous day the laboratory cadre had not carried out the gold standard gram staining on the NLF isolate. His reasons for skipping gram stain was that he thought it was obviously not Staphylococcus species colonies, nor Streptococcus species colonies, nor LFC colonies, but NLF . As a scientist on the Microbiology bench the next day.*
Mention steps you would take on seeing this resistant isolate on AST plate to ensure accurate results **[25].**

5. Discuss latent TB and TB disease focusing on public health prevention as well as the laboratory diagnostic tests available in Zimbabwe **[25].**