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University Examinations 2024/2025

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF MASTERS IN PUBLIC HEALTH

MPH 5114: PUBLIC HEALTH BIOLOGY

DATE: JANUARY 2025 **TIME: 3 HOURS**

INSTRUCTIONS:
Answer Question one and any other three Questions

QUESTION ONE (30 MARKS)

a) Describe three behavioral factors that can influence vaccine uptake in communities (3 Marks)
b) Briefly describe how chronic stress impact immune system function, and what are the potential health consequences (4 Marks)
c) Describe 3 ethical challenges associated with gene-editing technologies like CRISPR in reproductive medicine (4 Marks)
d) Briefly describe 3 strategies towards preventing the spread of resistant pathogens (6 Marks).
e) Provide examples of two re-emerging infectious diseases and discuss the reasons behind their resurgence (4 Marks).
f) Describe two public health strategies to reduce air pollution exposure (2 Marks).
g) Outline the role of vaccination and public awareness campaigns in controlling infectious diseases of public health importance (3 Marks)
h) Describe 2 policies governing food safety for public health protection (4 Marks)

QUESTION TWO (10 MARKS)

a) Analyze the impact of genetic variations on immune responses to vaccines,
b) How do these genetic differences influence vaccination programs and individual health outcomes?

QUESTION THREE (10 MARKS)

a) Examine how genetic, social, and cultural factors affect drug metabolism and response in different populations. (7 Marks)
b) How can public health policies address these disparities? (3 Marks)

QUESTION FOUR (10 MARKS)

a) Describe the biological mechanisms driving antimicrobial resistance (6 Marks)
b) Describe strategies that can be implemented to slow the spread of drug-resistant infections (4 marks)